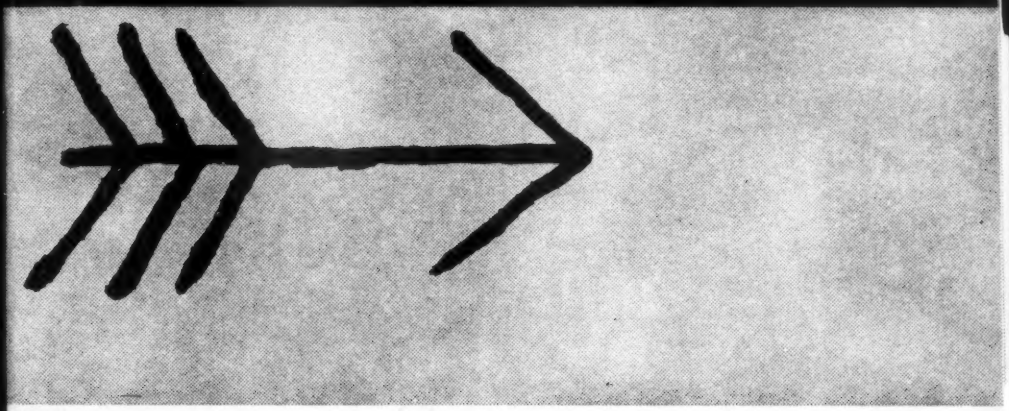
TRENDS IN EDUCATION



32

The Growing Brain
Careers Education
History Teaching
Helping Slow Readers
Aspects of Programmed Learning
Adult Education and Social Development

OCTOBER 1973

Department of Education and Science

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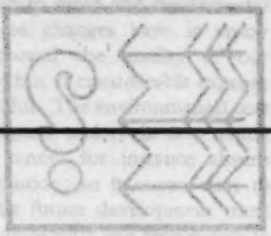
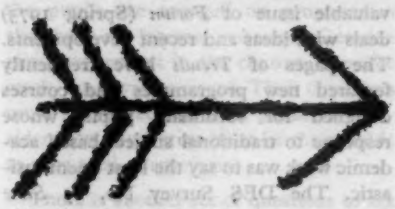
CONTENTS





NUMBER THIRTY-TWO OCTOBER 1973

Talking Points 2

Crucial Years

0 to 8: The Growing Brain 5
by John Brierley

13 to 17: Careers Education 12
by G. S. V. Petter

History Teaching Analysed 16
by Phyllis Giles and Geoffrey Neal

Helping Slow Readers 26
by M. C. Tyson

Aspects of Programmed Learning 30
by James Hartley

Adult Education and Social Development 36
by K. T. Elsdon

Trend-Setter 41

Book Reviews 45

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TALKING POINTS

Themes and Projects

In Working Paper No. 42, a Schools Council project team discusses the curriculum in the middle years of schooling. Later this year it is to publish a second report on work which it has described as 'think-tank' rather than 'materials producing'. The thinking of the team reflects and develops a widespread belief that in the middle years the processes of learning are more important than the content of learning. This view is traced back to the Hadow Reports of 1926 and 1931; from the second of these the Schools Council report quotes—'the curriculum is to be thought of in terms of activity and experience rather than knowledge to be acquired and facts to be stored'.

Activities and experiences associated with the pioneers of early childhood education in the 1920s are by now the common practice of the primary school. They have affected the attitude of children to the business of learning by making it more attractive and better adjusted to the stages of child development. They have made the work of a school more outward-looking, more creative, more individualised, more varied, more colourful. These developments have attracted much attention and on the whole a widespread approval. Generally enthusiasm for learning by discovery and a free choice of educational activity has been tempered by the expectation that teachers will supply professional guidance, select materials for learning and influence the choices made.

The more debatable aspect of this, not so modern, movement in education is its impact on the programmes designed for older children. Again there is a widely accepted foundation for forms of approach that differ from those of the past. The issues were discussed in relation to less academic children of secondary age in the Newsom Report and in relation to the 11 and 12 year olds in the Plowden Report. As a result much attention is now centred on the curriculum for the new Middle School and amongst many other documents a valuable issue of *Forum* (Spring 1973) deals with ideas and recent developments. The pages of *Trends* have frequently featured new programmes and courses designed for secondary pupils whose response to traditional subject-based academic work was to say the least unenthusiastic. The DES Survey No. 15 *Slow Learners in Secondary Schools* described in detail an apparent lack of courses aimed to discover their interests and develop their strengths, but it also drew attention to enterprises and experiments which did produce marked improvement in the attitudes of such pupils in certain schools. A further HMI study now taking place may yield more of these. The heart of the problem has been expressed in a sentence of J. S. Bruner's: 'The quest, it seems to many of us, is to devise materials that will challenge the superior student while not destroying the confidence and will-to-learn of those who are less fortunate'.

What are the elements common to enterprises which *do* try to emphasize learning rather than teaching, the use of skills for problem solving, the assembly of knowledge around an issue of clear significance rather than its insulation in separate subjects? Probably the best known is the project, theme or point of departure for inter-disciplinary enquiry. This the teacher selects and then, together with colleagues, works out over one or more than one established area of learning. Sceptics exist and failures of judgement occur but the effect of enlivening the mood of pupils and bringing home to them the positive application of basic skills is often apparent. There may be occasions when work of this kind becomes dangerously attractive both to pupils and teachers. Realities may be distorted by over-indulgent efforts to devise inter-disciplinary themes with little purpose other than the sterile claim to be 'breaking down subject barriers'. Certainly there are

important areas of learning which cannot be dealt with at any level within the limits of a single school subject. These produce large and abstract themes such as Race or Conflict, the Family, Law and Order. It seems pointless to pursue studies of this kind if in fact the work is fragmented and the pupils are engaged on programmes that have no internal cohesion. Genuine enquiries, except in the context of police work, can never be closed. Their objectives must be limited but each pause for consideration of progress must be the prelude to a renewal of enterprise.

There is another set of questions to ask about themes and projects. Do they strengthen motives for learning and encourage pupils to find out for themselves? Are they sometimes regarded merely as artificial teacher contrivances? Should we be aiming with some secondary pupils at a greater measure of pupil autonomy in the selection and planning of the work with the application of skilled advice only at points where the need for this becomes self-evident?

Schools and the Environment

1970 was European Conservation Year and one outcome was the formation of a 'Young People and the Environment' group for the South-West counties. It was believed that inter-authority co-operation would be beneficial, not least in defining the goals of environmental education and in distinguishing it from the well-established use of the environment for study purposes in the traditional sense. The group believe that awareness, understanding, trusteeship and involvement in environmental care by young people should be the four key aims, and its members have tried collectively and individually to promote environmental education in these terms.

Public attention has now been focused on the growing and insistent concern about the damaging (in some areas irreversible) effect on his environment of man's present exploitation of natural resources. We in this country have been relatively fortunate so far: our planning and conservation policies and laws are ahead of many other countries, but they have achieved only partial protection of the environment during a period when it has been subjected to rapid and fundamental changes. These changes have in many respects improved the quality of our material lives, but at considerable expense to things of value. The environmental cost of a technological society is now rising steeply; we cannot for instance absorb unlimited pollution: so it seems clear to the group that future development must be planned intelligently and responsibly to avoid a disastrous exhaustion of key resources, and to prevent irreparable damage to the natural systems and balances on which all life depends. Although the subtleties of these balances are imperfectly understood the harm being done to them is already only too evident and measurable. Members of the group are not given to panic but they conclude that the well-being of this and future generations may indeed be at stake. They believe that certain trends could, if not controlled or even reversed, have disastrous consequences for man's future. In this unprecedented situation, what, if anything, is the role of education?

The great majority of young people, along with adults, have become aware that man's treatment of his environment is a profoundly disturbing matter. For this rapid awakening the mass media must take a great deal of credit; it is but a few years ago that ignorance and indifference were normal. Of the many who know of the existence of a problem, some have probed beneath the surface of the alarmist newspaper headlines and the Doomwatch programmes to study the situation in depth and not a few of these have felt sufficiently disturbed to take up the issues of pollution and population in the way that the 'bomb' motivated people in the fifties. It cannot honestly be said that the education service has so far led the way, but syllabuses of environmental education are now emerging and beginning to gain approval of examining boards, and student teachers are being trained to think of environmental education as important. Many believe that a population which is emotionally concerned but not ecologically literate could be almost as dangerous as an unconcerned complacent one. Education

must inform and enable both adults and young people to evaluate properly not only facts but also opinions. It will be to the present generation of schoolchildren that future governments will have to look for understanding and support for restrictive as well as constructive measures.

The South-Western group felt it necessary to define the terms used and to identify the aims of education in regard to the environment.

By 'the environment' the group mean the total physical environment, whether natural or man-made, in which human life exists. It thus embraces the atmosphere, the earth's crusts, oceans and inland waters, the land and its resources, cities and villages, and all forms of life whether plant or animal.

Crucial to the role of education is the fact that mankind is moving rapidly into a stage of his evolution in which he makes, and must make, conscious and deliberate decisions about his environment, instead of, as hitherto, crudely satisfying his needs as best he can. And it is the attitudes of individuals and communities to themselves, to their fellows, and to their surroundings, which determine the decisions they take.

In the group's thinking, therefore, schools and colleges should seek to develop in their students an attitude that combines intellectual understanding, respect, concern, and restraint, with a positive and optimistic outlook towards the present situation. The group believe that the community must be able to look to the education service to ensure that young people leaving school and college are aware of environmental issues, have some ecological understanding of the environment, and are prepared to play their part in safeguarding its quality for themselves and their successors.

In furtherance of its aims the group is preparing a handbook for teachers and has addressed the following recommendations to Local Education Authorities:

(a) That colleges and schools in each Authority be invited to report on the extent that education for environmental responsibility has become important in their curriculum and extra-curriculum activities.

(b) That one member of each Authority's advisory staff be designated as having special responsibility for encouraging this environmental education, while at the same time all advisors be urged to consider the contribution which their own special fields of interest can make.

(c) That further encouragement be given to in-service work among teachers with regard to environmental education and that adequate financial provision be made for this purpose.

(d) That in addition to some centrally located schools, residential centres and teachers' centres be encouraged to act as focal points of development in environmental education, and that each be enabled to become a resources base for local material illustrating wider environmental issues: in this development, the resources of museum and library services, county council departments and other statutory bodies with material to offer would need to be fully used.

(e) That all schools and colleges be encouraged to support the work of the appropriate County Conservation Trust and other relevant voluntary organisations, and that block payment of subscriptions to enable all schools to be affiliated be seriously considered. Authority support and encouragement is also needed for schools wishing to involve pupils in projects for the care and improvement of the environment in both town and country—for example National Tree Year, 1973.

(f) That an LEA policy on the use of local fieldwork sites be prepared to avoid damage to the more popular ones, and that complementary to this, every encouragement be given to the inclusion of conservation features in the grounds of all existing and new schools, and their imaginative use for environmental teaching, not least because children must first learn to respect their immediate environment (as recommended by Schools Council Project Environment paper *The Outdoor Resource Area in Schools*).

Crucial Years

The early years of life are crucial for the development of the brain; the early teenage years are vitally important for career decisions. Some of the implications are discussed by HM Inspectors in these two articles.

0 to 8: The Growing Brain*

JOHN BRIERLEY

John Brierley is Divisional Inspector for the North Midland Division and author of books and articles on biology and child development.

Attention has been focused sharply on the education and condition of young children particularly of pre-school age by the recent announcement of the intention to expand nursery eductaion and by the concern for the thousands of pre-school age children left each day with illegal child minders while their mothers go out to work. There is increasing pressure too, to break the cycle of deprivation through the education of mothers and parents of future children. Research findings about the brain and behaviour are highly relevant to these three areas. The findings strengthen the case that pre-school and the early school years are crucial to later development of potential. Science seems to have reassured common sense and the observations of teachers.

Two cautionary notes are worth sounding at the outset. First, human brain studies present a formidable problem and are at an early stage of development. Research has made little inroads here and there but no central theory has emerged about how the brain works; for that we await some Einstein of the mind. Second, much of what we know about the brain is based upon work with animals. And not only this, experiments with animals on deprivation, for instance, are extreme (though no more so than children tied to table-legs or put in rows in carry-cots in disused garages by illegal child minders). We need to be cautious about extrapolating the results of animal research to people; it is a big step to take. But such comparative studies may help us to understand more about the behaviour and physiology of our own species.

Nutrition and Brain Growth

The human brain develops earlier than the rest of the body. At birth it is about 25 per cent of its adult weight, while by only the age of five it reaches 90 per cent. Such swift growth depends on protein availability and the protein requirements of the brain before birth and in the first two to three years of life are great. Indeed, during the prenatal period and the first year of life the brain absorbs protein at the rate of 1 to 2 mg a minute.

Two important questions for educationists are: can early undernutrition be identified as one contributor to adult attainment and are there vulnerable periods in the development of the brain when under-

*** A version of the first part of this article appeared in *New Society* on 4 October 1973. The author discusses here some educational implications of some recent neurological studies.**

nutrition might have serious consequences? Severe undernutrition before two or three years of age, especially shortage in proteins and in the vitamins and minerals necessary for growth does indeed appear to cause lowered IQ. Seriously malnourished South African coloured children were some 20 IQ points lower than children of similar parents who were well fed. But timing is important. Undernutrition happening for the first time in children older than three seems to have no permanent effects. Even as late as two, better protein feeding can improve IQ by as much as 18 points.[1] All these facts are taken from countries where extreme undernutrition is common, but serious nutritional deprivation is probably quite rare in Britain. It is perhaps not so much lack of money which is the problem in this country but ignorance: 'against dunderheadedness, the gods themselves struggle in vain'.

All this does indicate that good nutrition during pregannncy and up to three years of age, is important, and nutritional studies need to be well taught to adolescents and, if necessary, to mothers.

On vulnerable periods important work has been done with rats by Dobbing.[1] A key question is: are there periods of heightened vulnerability in the development of the brain when growth retardation results in long-lasting deficiencies in brain function? This has been shown to be so for rats who developed smaller brains with altered chemical activity when suckled in larger-than-normal families and all this despite good feeding after the growth spurt.

The brain growth-spurt in man begins towards the end of the first six months of pregnancy and ends at about two years of age. During this period important changes take place in the brain, the growth and branching of the nerve cells to form inter-nerve cell connections. The parts of the nerve cells that associate at nerve synapses are the fine tendrils of the nerve cells, the dendrites.

The first two years of life may be for human beings not only one of great vulnerability but also of opportunity. It is a period when the brain might have a 'once only' opportunity to grow properly. At this time the baby is staring, feeling, tasting, in short exploring. If the brain is starved nutritionally at this period, its capabilities may be lowered in physical terms by a deficit in dendritic branching and in the establishment of synaptic connections which may well have lasting behavioural consequences.

Crucial Periods

The brain may be vulnerable and sensitive in other respects than nutrition, indeed, nutritional deprivation may have to be extreme to have a lasting effect on its capabilities, and other factors may be much more important: the provision of a stimulating environment to explore; a rich language environment; heredity. Brain researchers are, of course, up against a formidable obstacle; the fact that the brain is hidden as well as being complicated and delicate. A fundamental question is important for educationists. Is there any evidence that there are critical periods of development in man when he is unusually

[1] Jensen A. How much can we boost IQ and scholastic achievement. *Harvard Education Review* 39 (1969).
[2] Dobbing J. and Smart J. L. *Early undernutrition, brian development and behaviour. Ethology and Development*, ed Barnett S. A., Spastics Society and Heinemann (1973).

receptive to learning: language, for instance? If there are, and these sensitive periods are neglected, the optimum moment for acquiring these skills passes and they will never be learned so easily again. In man as yet we do not know about sensitive periods though clear evidence is emerging from animal experiments that sensitive periods do exist. It is not unreasonable to suggest that similar periods might occur in children and if we could discover them education might be substantially improved.

As mentioned earlier, the nerve cell connections in the brain are changing and developing in early childhood and in man this development may well continue into adult life. However, if evidence on brain plasticity in cats can be applied to children the connections seem to fix after a certain time. If one eye of an adult cat is covered with an opaque substance that lets in light but not pattern there is no change in the behaviour or electrical activity of the brain cells after three months: pattern can be distinguished. The cat is normal. Kittens on the other hand seem to be totally blind in the eye that has been covered for three months. The brain cells in the visual coetex do not die but the nerve connections appear to have degenerated through 'lack of experience'. After 15 months the kittens remain blind.

But more precision than this can be given as to timing. Other experiments show that the period of high susceptibility is in the fourth and fifth weeks after birth. Eye closure for as little as three to four days leads in this period to a dramatic decline in the number of brain cells that can detect light.[1]

It is tempting to extrapolate from this work to educational implications but the degree of deprivation used is extreme and there is no evidence that the kind of environment we might describe as 'deprived' with young children lacks any stimuli that are necessary for perceptual development. But if young children are educationally, socially and culturally deprived there may be impairments like those found in animals. This is a big step to take but it is not out of the bounds of possibility. Indeed it does not take much imagination to extrapolate these findings to the earliest phases of development in the first and second years of childhood when the brain might be influenced profoundly by environment.

A second interesting feature of brain plasticity is that after about eight, speech and language cannot be acquired by the 'minor' hemisphere of the cortex if the 'dominant' hemisphere (where the speech region is) is damaged. In cases of early damage to the left hemisphere, the right can come to control speech vicariously, such is the flexibility of the young brain.

Language

On the right side of the brain opposite to the speech area is a region important in perception. It is interesting in relation to education that both the speech and perception mechanisms develop from parts of the brain known as the 'uncommitted' cortex which is large in man compared with other mammals. Some neurologists (and education lists) believe that these areas are like a blank slate at birth to be filled with learning and experience so that what a person becomes is determined

[1] Blakemore C. and Cooper G. F. Development of the brain depends on the visual environment. *Nature* 228 (1970).

solely by his upbringing and education. The idea is somewhat misleading because although mental and personality traits are environmentally more plastic than most physical and physiological traits they are not completely so and are dependent upon inherited qualities.

Speech is the essence of being human and is one area which shows that evolution has endowed human beings with cerebral powers that allow communication, though as yet knowledge is sparse about the features of brain organisation involved. But we know that the human brain is not just a larger version of an ape's brain; its wiring pattern is different. Man seems to be unique in having profuse cross-connections and a special 'switching' mechanism in the brain which enable children to associate the image and the feel of, say, a teddy bear with the sound pattern 'teddy bear'. Such links are few in other primates.[1]

To underline this evolutionary view of language development, the initial steps of speech in children the world over suggests rather strongly a uniform unfolding of a genetic programme and an inbuilt capacity to master language rapidly. In other words, something in the brain, some set of structures, is developing that can scan the environment from infancy to discover out of all the hubbub some kind of order. Girls and boys differ in the development of language competence, girls developing it earlier than boys. Indeed there are differences between boys and girls in the speed of development of nerve cells in the left and right hemispheres of the cortex, the left (language hemisphere) developing faster in girls, slower in boys. This is no doubt genetically controlled but the fact has practical implications for education. These points not only emphasise the need to provide a rich language environment at school and pre-school but to make parents and future parents aware of its basic necessity to humanity from an early age—it is as vital as food for proper development.

Engrams

All this evidence suggests that the brain has a range of inborn capacities. Evidence from animals shows that they have a range of inborn visual capacities which give meaning to the world from the first look and it is likely that we are similar. In frogs, cats and monkeys there are brain cells which fire in response to certain patterns, shapes and moving objects. Clearly there are specific cells in the brain that form a kind of visual alphabet to enable animals to appreciate their environment quickly. A similar alphabet might exist in man that one day we may understand.

There may be, for example, inborn patterns of nerve cells in the brain keyed to respond to *broad* classes of stimuli—flux, total amount of contour ('edginess'), size, movement, for example. When a baby is born it has no experience and has to start with something. One inborn key might be a face shape, for this is a feature of a baby's world that ministers to its wants and contains all the appropriate cues (edges, etc.) mentioned previously. The baby's pleasure at this signal is further reinforced by food and warmth so a face-pleasure-food link is formed. Other patterns are woven on to this through nerve connections. These at first have high thresholds but with continual use become a 'nerve web'. The face has thus turned into 'mother' with her

[1] Pfeiffer J. E. *The Emergence of Man.* Harper and Row (1969).

smile, warmth, scent, songs and food. The webs are called engrams (a kind of writing left behind in the brain by conscious experience) built up, perhaps, through nerve cells in the cortex by learning. The kind of engram woven has finger-print individuality because of an individual's unique heredity and unique experience. What is important is that a deprived child can build up engrams that may mark him for the rest of life. Fear and cruelty, besides a narrow environment with no toys, no company, no stimulus, no affection, inarticulate communication and a prohibitive attitude to children's natural exploratory activities, may permanently retard mental development. And exploration in itself (an important human drive) may feed back on the brain and physically change it. The baby fastened in its pram for too long or propped up in a chair before a TV set to keep it quiet is more 'deprived' than the child who is allowed to explore.

Exploration

Exploratory behaviour is a valuable characteristic of man, begins early and continues for much longer in the life of the individual than that of other higher primates.

There is also a striking sex difference. Of nursery school children between three and four, girls chiefly engage in sedentary activities, are increasingly proficient in verbal skills while boys are still actively exploring their environment. These differences could very well be based on brain differences between the sexes. In male rats certain cortical areas are concerned with novelty detection and hence exploration and perhaps similar differences occur in humans.

Arousing and stimulating exploratory interest is biologically sound and even in potentially uncreative children might increase inventiveness in later life. The conditions under which exploratory learning flourishes are: security, minimum interference by adults (though reinforcement by parents is important), time and opportunity and an environment which invites exploration and experiment. Even in pre-verbal children experiment and highly sophisticated exploration is common—in learning about touch for example. Here is one observation described by the ethologist, Niko Tinbergen:[1]

> 'A 12-month-old boy was observed crawling about over a sandy slope which was bare but for isolated rosettes of ragwort and occasional thistle plants. After having moved over many ragwort rosettes without showing any reaction to them, he happened to crawl over a thistle, whose prickly leaves slightly scratched his foot. Giving a barely perceptible start, he crawled on at first, but stopped a second or so later, and looked back over his shoulder. Then, moving slightly back, he rubbed his foot once more over the thistle. Next he turned to the plant, looked at it with intense concentration and moved his hand back and forth over it. This was followed by a perfect control experiment: he looked round, selected a ragwort rosette and touched it in the same way. After this he touched the thistle once more, and only then did he continue his journey'.

[1] Tinbergen N. Functional ethology and the human sciences. *Proc. Roy. Soc.* 182 (1972).

Animal and Human Behaviour

To arrive at a better understanding of human behaviour ethologists have tried to apply to man the methods and languages of students of animal behaviour. The methods used involve accurate objective descriptions of what animals do and what circumstances bring about these movements. Maria Montessori recognised, as Tinbergen does, the importance of direct observation. In her book *The Secrets of Childhood* she wrote:

> 'The psychic life of the baby must be observed as Fabre observed his insects, going in search of them to surprise them in their natural environments and lying hidden so as not to disturb them'.

Comparative studies by ethologists between different species of animals including man have enabled some fruitful hypotheses to be made about human behaviour. In relation to the mother-child unit, experiments with rhesus monkeys have shown how important this unit is to the full expression of adult behaviour and in the development of normal sexual relationships. Monkeys with no mother displayed anxiety and distress. They rocked backwards and forwards and huddled in a corner. Monkeys brought up on models (made of wire and towelling with milk supplied from a bottle on the frame) did not learn to behave socially. Apparently, it is not only having a mother that is important but having one that pushes the baby out to play with others periodically so that he can learn, in the rough and tumble of play with his peers, proper social and sexual relationships. Model mothers seem to be 'over-protective'.

These experiments are extreme in the matter of deprivation and more recent experiments done with rhesus monkeys separated from their mothers for a few days[1] is a situation more comparable with people. At first the infant called a great deal and its play activity was reduced. Even after two years symptoms of depression persisted.

To a great extent these experiments support Bowlby's observations on babies and toddlers separated from mothers. He saw straightforward deprivation of the presence of the mother during longer or shorter periods as the primary cause of a failure in children first to form personal bonds with the mother and subsequently of social bonding of any kind. He argued that socialisation comes about by a widening of the circle of friends which is only possible if the first personal bond is successfully established. He makes it clear that the young child needs a stable, loving mother and that modern social and industrial conditions often disrupt or even entirely fail to provide for this early phase of socialisation in other mammals in part inspired by Bowlby's work, gives increasing support to this thesis. It may not just be the presence of a stable mother figure, but an extremely intricate pattern of maternal behaviour that is required. Even very mildly distrubed mothers, such as slightly insecure, or preoccupied working mothers may unintentionally deprive their children. Conversely, over-intrusive, under-occupied mothers may well through interfering at moments when a child wants to play on its own with peers, make a child withdraw. The paucity of knowledge of these early phases of human life (including the role of the father) is astonishing, but careful observations of family life

[1] Hinde R. A. and Spencer-Booth Y. Effects of brief separation from mother on rhesus monkeys. *Science* 173 (1971).

in man and other mammals and also in birds may reveal even more widespread damage to socialisation than Bowlby has pointed out.

Heredity

No one can seriously doubt that performance—intellectual, physical or social—is developed from an inherited base[1,2] (the genotype). A dozen or more abnormal chromosome types exist all of which are to be found aberrant in mind and brain—mongolism is one.[3] One other powerful strand of evidence (among many) which shows the importance of heredity is the observation that differences occur between brothers and sisters who have had the same chances and the same encouragement. As Dr Johnson put it: one man will learn as much in the Hampton Stage as another in the Grand Tour of Europe.

What is important in education is that we do not know yet what is or is not the necessary or the favourable environment for a particular genotype. We know that to maximise potential some children in a class need pushing, others need freedom. We know from history that poverty can make for larceny in one disposed that way; in another it may sharpen his wits, and in another it may enhance genius. What is worth emphasising for education is that no environment is 'better' than any other and no genotype is 'better' than any other. Except for identical twins each of us is born with a unique genotype and each requires a different environment to develop the highest potential of which he or she is capable. In practical terms this means that it is *just* to treat different people *differently* so long as each is treated as well as possible.[4]

In conclusion it may be said that we know something about the brain, much of which is important for teachers, parents, social workers and future parents to be aware of: the fact that people are unique genetically and need unique environments to maximise their unique capabilities; the importance of early nutrition in respect of brain development and IQ; the importance and timing of early (pre-school) experience which might physically influence the brain; the importance of exploratory learning and a good language environment from a very early age, for a lack of these basic human needs might have a detrimental and lasting effect on the functional qualities of the brain; the sex differences, since by the age of five girls have passed through more of their formative and critical periods in language development than boys; the importance of the uncommitted cortex in relation to the quality of the environment provided by parents, kindred and school.

Experience gained during the first eight or 10 years of life appears, on the evidence at hand, to be critical because of lasting effect on the brain. Of these years from birth to five may well be crucial, and deprivation then might be irreversible, to make in the early school years, thousands of children from poor homes backward in educational attainment.

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[1] Brierley John. *The Thinking Machine*. Heinemann (1973).
[2] Burt C. The Gifted Child. *Yearbook of Education*. Evans (1961).
[3] Polani P. E. Chromosome anomalies and the brain. *Guys Hospital Reports* 116 (1967).
[4] Thoday J. M. Geneticism and Environmentalism. *Biological Aspects of Social Problems*. Oliver and Boyd (1965).

13-17 Careers Education

G. S. V. PETTER

G. S. V. Petter is Staff Inspector for Secondary Education with special responsibility for careers education.

Between 13 and 17 boys and girls have to face a period of choice, decision and adaptation. Choices are open to them because it is in the nature of a democratic society that there should be a right to choose. Decision is enforced because that, too, is inherent in the structure of our society—by the age of 17 hard educational decisions of one sort or another must have been reached. Adaptation is demanded because no-one contracts into society on his or her own terms.

Education at this stage must, as always, contain elements which are intrinsic to the needs of pupils and others which are extrinsic, introduced to help them face the demands made for decisions and adaptation. The intrinsic elements, such as coming to terms with their own strengths and weaknesses and learning to live and work with others, the training of the intellect, the development of creative and aesthetic sense, the challenge of moral principle, have to be balanced against, and related to, extrinsic elements which are concerned with preparation for a way of life, with the development of skills and the acquisition of knowledge having relevance for the future. It will not be easy to isolate the extrinsic elements until a point of decision is reached for each individual. But the moment will come when a specific target *is* settled, whether it be that of obtaining an unskilled job or that set by a public examination.

There is general agreement about one essential element—information about the various activities essential to the maintenance and development of organised society, and about opportunities for work. In the dialogue between pupils, teachers, parents and careers officers during the last years of statutory school life, there is what might be called a divergent discussion designed to open up the world before the eyes of the pupil, and to expand horizons. After a point, discussion must begin to converge onto some broad area in which the boy or girl in question may find the right niche. As there is a close link between learning about oneself in terms of capacities and limitations, and discovering those areas in which aptitudes could find fulfilment, it seems right to link information about the working world with tutorial work designed to help young people understand themselves and communicate with each other.

Apart from this, careers education is, in the minds of many, a matter of infusion, that is of using subject areas as a means of linking academic disciplines with real life situations. It has often been urged that the subjects of the curriculum should have relevance to the real world of which young people will be active members in a short time. But preparation for adult life means preparation not only for earning a living, but for spending time. Secondary education itself is, in part at any rate, a process of initiation into all aspects of living. This brings us straight back to all the aspects of a secondary programme concerned with personal development, including the development of skills and aptitudes, the study of the material world and of human society, an introduction to creative/aesthetic experience and an exposure to the

world of ideals and inspiration. Implicit in these objectives is the notion of intellectual training, of the building up of a body of knowledge, of stimulus to creative impulses, to aesthetic sensibility and above all to the cultivation of moral, political and social awareness. If these purposes inform the whole secondary programme, they equally inform careers education as one of the essential strands of the curricular structure. Good careers education is in fact good secondary education.

Careers Intentions

Chapter 12 of the 1972 White Paper[1] is called 'After School and Beyond'. After an outline of the motives for continuing education after the age of 18, it is said that 'not far from the surface of most candidates' minds is the tacit belief that higher education will go far to guarantee them a better job. All expect it to prepare them to cope more successfully with the problems that will confront them in their personal, social and working lives'. The reference to 'better job' echoes the concept of career as a competition for betterment and promotion rather than as a way of living. But we are reassured in the next paragraph which refers back to 'the problems that will confront them in their personal, social and working lives'. Reference is made to 'the sincere desire on the part of a growing number of students to be given more help in acquiring—and discovering how to apply—knowledge and skills related more directly to the decisions that will face them in their careers and in the world of personal and social action. This is what is meant by relevance'. These are very proper sentiments, implying as they do that exploratory discussion has ended and that students are focusing attention on some specific way of living or earning for which they seek to prepare themselves. 'A wide and flexible choice of course' fits very well the various needs of a multifarious collection of students.

But Chapter 14 'Numbers and Costs in Higher Education', sounds a note of warning. Here we read that 'there seems little doubt that the continuing expansion of higher education will more than match the likely expansion of graduate employment opportunities as these are understood today'. It is true that in paragraph 117 the value of the intrinsic element of education is recognised—'the Government consider higher education valuable for its contribution to the personal development of those who pursue it'; but the real spirit and meaning of this paragraph is contained in its last sentence—'the Government hope that those who contemplate entering higher education—as those advising them—will the more carefully examine their motives and their requirements; and be sure that they form their judgment on a realistic assessment of its usefulness to their interests and career intentions'. At this point then the White Paper acknowledges the value of education for its own sake, but equally recognises that the the nation cannot afford a system of education in universities and polytechnics wholly unconnected to its needs 'in a time of rapid social change and technological development'.

Advice and Consent

At the ages of 13, 15 and 17, that is before the pupil enters on the fourth year, the sixth year or competition for a place in higher educa-

[1] *Education: A Framework for Expansion.* Cmnd 5174, HMSO.

tion, choices must be made and decisions made about them. At 13, it is probably safest to advise that all doors be kept open. At 15 the majority of secondary school pupils will be giving serious consideration to an area of employment and, in some cases, of deciding on specific employment. For this majority, it seems soundest to advise a general education as a foundation for further education and training, but for the ablest, whose further education will be full-time, the process of exploring possibilities for the future will not have come to an end. At what point in their case should we try to induce a convergent process? Often the question is answered for us by the students themselves who know by a process of elimination the academic area in which they want to work at VI form level or in a college of further education. But the dialogue between parents, teachers, careers officers and pupils at this stage is of significance, if only because it is important to point out to enthusiasts for a particular subject that they may indeed take it but that, if they hope to get university entrance, they will have to accept the prescribed diet, whatever that is. Equally, this is probably the moment to point out that whereas a first class degree is likely to provide a pass key into many areas of the world of work, and a more modest honours degree will with luck provide a latch key into certain specific jobs, graduate employment opportunities are not unlimited, particularly for those to whom 'status' matters.

A possible contribution towards relaxing the strain and frustration felt by some aspiring and ambitious young people may be to emphasise that the word 'career' is undergoing a metamorphosis in meaning and implication. In prospect, a career in the contemporary world suggests a way of living; in retrospect it describes how a person has used his time and energy over the years. In prospect it may throw forward an image of a man or woman who has grown to a certain personal stature, whatever functional status they may be destined to hold; in retrospect it describes a path of continued personal development as a participating member of society, undertaking a particular role, holding a functional status of varying importance—not necessarily of increasing importance. It is salutary to remember that the concept of the 'career' belongs to the 19th century, the age of the virtuoso. This is not meant to imply that in the 20th century there are no giants or bright stars. The mark of an adult is the capacity to recognise other people's talents. If the concept of greatness in human beings were to disappear, civilisation would soon be at an end. To try to damp down human aspirations, to curb ambition and fetter talent would be to impoverish a society which needs human talent if it is to survive and prosper.

Nevertheless it seems the responsibility and indeed the duty of the careers teacher to focus the attention of young people not on the prospect of fulfilment in terms of success measured by wealth or renown or personal power, but on successful living measured by useful and fruitful participation in what may well be a team achievement. The significant thing about the moon probe was not just that the moon was reached, but that it was reached as a result of a colossal team effort. If career satisfaction were to depend on status, which members of the huge team concerned with the moon shots would have had 'successful' careers? To the historians of the future this question will be totally irrelevant. If the present is regarded as an age of individualism, it will also be noted that the more people are 'doing their own thing' the less

significant it becomes to be well known. Television personalities are not our masters or our models, but our slaves, paid handsomely to entertain us but to be discarded when we tire of them.

Careers education must have a connotation broader than that of careers guidance. The business of educators is not only to indicate career patterns but to help young people to learn to adapt themselves to circumstances, and indeed to occupations in which necessity as well as choice will involve them.

Careers Education in Secondary Schools

Education Survey 18 1973

HMSO 68p.

This report publishes the result of a survey of Careers Education in Secondary Schools by Her Majesty's Inspectorate. The decision to make a survey was made in 1971. A questionnaire was sent to a sample of over 1,100 secondary schools and this was followed by HM visits to 106 schools during 1972. The report is in two parts: first what the Inspectors found, and secondly what they recommend.

Choices and challenges for teachers of a much debated subject.

History Teaching Analysed

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Of recent years increasing attention has been given to curricular reform and to the nature of children's learning and its assessment, with a view to improving the calibre of what is done in schools. In history, as in other subjects, before improvement can be effected it is usually necessary to consider the nature of the subject as well as the construction of syllabuses which determine teaching and the ensuring methods of assessment.

One approach is through the medium of curricular analysis which attempts to reconcile the proposed learning experiences of the subject as exemplified by the syllabus with the expected future behaviour of the pupils taught, with more clearly pre-determined objects in mind than is usually the case. Of recent years curricular analysis stimulated by the work of Bloom[1] and his colleagues has made its greatest impact in the science subjects, and whilst it is debatable whether or not an approach based solely on an analytic form of scientific method is necessarily apposite to history, the application of its techniques may have considerable implications. As a means of initiating discussion two examples of recent work in the field of curricular analysis are considered.

In his earlier work Bloom divided educational objectives into three domains: the cognitive, the affective, and the psychomotor as a means of giving structure to the task of classifying pupils' behaviour. In the latest work[2] he and his colleagues carry the process of classification further and suggest areas of historical 'knowledge' in addition to pupil behaviour.

By plotting behaviour against content on two axes Bloom obtains an analysis grid which can serve as a framework for the construction of the history syllabus—Fig 1.

A second example (Fig 2) is taken from Coltham and Fines[3] and although it is more concerned with the behaviour of the learner and the use of a grid is not suggested, it is interesting to note the similarity of approach.

* This article is based on a study of examinations and history teaching by a group of HMIs.

[1] Bloom *et al.*, 1971, *Handbook of Formative and Summative Evaluation of Student Learning*, McGraw Hill, London.
[2] Bloom *et al.*, 1956, *Taxonomy of Educational Objectives*, Longmans, London
[3] Coltham J. B. and Fines J. 1971, *Educational Objectives for the Study of History*, London Historical Association.

History Content	Pupil Behaviour
1.0 *Historical Focus* 1.1 Location 1.2 Level of study 2.0 *Analysis over Time* 2.1 Time periods 2.2 Sequence 2.3 Continuity and change 2.4 Relationships 3.0 *Topical Emphasis* 3.1 Political 3.2 Social 3.3 Economic 3.4 Geographic 3.5 Intellectual 3.6 Cultural 4.0 *Methods of Inquiry* 4.1 Evidence 4.2 Verification 4.3 Imagination 4.4 Probability 4.5 Interdisciplinary contributions 5.0 *Historiography* 6.0 *Historical Issues and Interpretations*	*Cognitive— Knowledge and Comprehension* Facts Concepts Generalisations Structure and models *Cognitive—Skills* Location of information Interpretation of graphic and symbolic data Identification of central issues and assumptions Evaluation of evidence and drawing of warranted conclusions Formulation of reasonable hypotheses Group participation—formal Group participation—informal *Affective—Attitudes and Values* Scientific approach to human behaviour Humanitarian outlook on the behaviour of others Awareness and interest Acceptance of responsibility Involvement Democratic values

Fig. 1

A. *Attitudes towards the Study of History*
1. Attending
2. Responding
3. Imagining

B. *Nature of the Discipline*
1. Nature of information
a) primary sources
b) secondary sources
2. Organising procedures
3. Products

C. *Skills and Abilities*
1. Vocabulary acquisition
2. Reference skills
3. Memorisation
4. Comprehension
5. Translation
6. Analysis
7. Extrapolation
8. Synthesis
9. Judgement and evaluation
10. Communication skills

D. *Educational Outcomes of Study*
1. Insight
2. Knowledge of values
3. Reasoned judgement

Fig. 2

Whilst detailed discussion of either scheme is difficult in the absence of precise definition of the qualities involved (which are considered in greater detail in both sources) the question must be asked 'To what extent can such frames of reference further understanding of the nature of history and pupils' learning and of syllabuses in schools?' In general terms, it appears that with very little adjustment to the first scheme and none to the second, these qualities could be expected equally from the study of—say—comparative religion or literature. If the differences in subject content on which thinking operates are ignored, then by logical deduction the absence of history from the curriculum might not affect pupils adversely so long as they studied either of these as alternatives. Clearly, however, if history teachers wish to maintain the unique and essential contribution of history, their stated objectives must be *sui generis*.

It is at this juncture that the argument tends to become clouded. First it might be generally agreed that from a study of the behaviour of human beings in past societies, pupils could acquire a longer perspective or wider viewpoint from which to understand and evaluate themselves, their contemporary world, and indeed the nature of man. It might likewise be agreed that this quality constitutes a historical sense. However, problems arise if it is further conceded that this sense can, and indeed must, be revealed to pupils in different ways and can appear to possess different meanings. It can, for example, take the form of a rigorous but satisfying intellectual inquiry, or it can be a half-mystical experience, 'While the light on a winter's afternoon, in a secluded chapel . . .,'[1] or both. Nevertheless, it remains true that all forms of historical experience depend for their veracity on acquaintance with the evidence of times past. Another *sine qua non* would be the need to cultivate a sense of period and a grasp of chronological sequence, however imperfect and limited. The truism that Clio is the muse of time is sometimes too eagerly overlooked. Knowledge and a grasp of chronology are by no means synonymous with a historical sense: indeed it is all too unhappily possible to possess the former without the latter. However, it has yet to be demonstrated that a historical sense can be acquired without them. Whilst attempts have been made, much further thought and discussion in this area are obviously needed to identify, isolate and evaluate those objectives which are specifically historical in character.

A closer examination of Bloom's Pupil Behaviour column (Fig 1) might lead some historians to enquire whether certain items are applicable to sociology rather than history, and it is interesting to note that history forms a sub-section of Social Studies in Bloom's 1971 work. Has the construction of 'models', in Bloom's sense of the term, any proper place in the study of history? The 'formation of reasonable hypotheses', too, is an occupation that historical scholarship might regard as legitimate only within carefully defined limits.

A further criticism may be made in connection with Bloom's subdivision of cognitive behaviour into various kinds of skills which are distinct from knowledge and comprehension. This may strike some history teachers as an artifical device which would complicate rather than simplify attempts to evaluate each. For example, the identification

[1] Watts D. G., 1972, *The Learning of History*, Routledge & Kegan Paul, London.

of central issues and assumptions and the evaluation of evidence may be deemed to require a high degree of comprehension as well as skill. The Coltham and Fines 'framework' (Fig 2) aims to contain the dual features of the Bloom analysis (History Content and Pupil Behaviour) within a single column, by introducing as section B the heading 'Nature of the Discipline', distinct in kind from sections A, C and D dealing with pupil power. The sub-headings of section B do not, however, suggest any necessary connection with history. The nature of information is no more than exemplified under the classification of 'primary' and 'secondary' sources, since the belief is held that 'it is not possible and is probably undesirable, to stipulate that certain facts are the essential ones'. It is conceded, however, that primary source material might be local for younger learners, and that concepts should be introduced partially in accordance with chronological age. For the rest, the 'Nature of the Discipline' deals with the pupils' need to understand the skills they practise, and with forms of pupil recording.

Thus even section B contributes towards reinforcing the emphasis placed on the acquisition of techniques in section C. This important list of skills and abilities, which bears some resemblance to Bloom's 'Cognitive Skills' list, appears more precise, comprehensive and logically developed, although certain items are patently more exacting than others. Once again, however, the list contains no specific reference to the discipline of history, although a stipulation is made that the historical material used for practising each skill should be comprehensible to the learner. Otherwise, the impression remains that these skills are objectives desirable in themselves: the medium is the message.

Two points may be worth considering. One is the possible danger, which some might regard as an opportunity, of the subject 'languishing', in Carlyle's phrase, 'into detached handfuls'. These could be all too readily joined with 'handfuls' of other disciplines, each isolated to foster the identical skill. Might not the end product be craftsmen debarred from becoming creative artists because their skill had not emerged in the course of 'doing' a subject? The second, related, point refers also to section D of the Coltham and Fines 'framework'. This recognises the close relationship between the development of cognitive and affective aspects of education, and lists three outcomes of great importance, viz., insight, knowledge of values, judgement.

But a historical sense which accords due weight to the affective factor does not appear among them. The nearest approach in the 'framework' to this form of creativity conditioned by the historical evidence is to be found in section A, listed as 'imagining'. Whilst, in contrast to Bloom, attention is properly drawn to the constant interaction of all the sections, it might be thought that imagining, which describes an activity different in nature from attending and responding, could be further developed to take its place among the educational outcomes of study. Some historians might be tempted to question most, if not all, the attitudes and values in Bloom's affective category of pupil behaviour. At first glance this section seems especially prone to imprecision: such terms as 'awareness' and 'involvement' and, indeed, 'democratic values' beg many questions. History teachers reluctant to confine their pupils' understanding of values to those in a democracy might well reject the apparently naive and uncritical concept underlying the phrase. Furthermore, there is the implication that the qualities listed would automatically transfer from pupils' behaviour when 'doing

history' to their behaviour in general. This is a large assumption which it might be found difficult either to prove or gainsay. In contrast, the Coltham and Fines 'framework' seems more sensitive to these difficult problems of whether one purpose of history is to form value judgements and whether transfer can and should occur. Whereas Bloom commits pupils to 'democratic values', Coltham and Fines more objectively expect 'knowledge about values'. Belief in the possibility of transfer is, however, expressed in the statement that ' the changes (in personal development) should be observable not only at time devoted to the study of history, but on other occasions in and out of school and, it could be expected, after school life has been completed'; in practice, it may well be difficult to attribute these changes solely to a study of history.

Finally, it is interesting that no reference is made in either scheme to success in examinations as a valid objective. Yet few would deny that examinations are an actual incentive of considerable consequence to many pupils. Some years ago it may not have been altogether respectable (or fashionable) to acknowledge this state of affairs. Without embarrassment, it is now expected that a high proportion of the 'new' 16 + scholars will wish to take some examinations which some educationists would like to see extended to cover the entire ability range above the ESN level. While feasibility studies in a common system of examining at 16 + are being conducted in history in the context of a school-leaving age of 16 + for all, the consideration of examination course objectives cannot be evaded.

Despite criticisms, however, these two analyses must be acknowledged and valued as pioneer attempts and as bases for discussion. They provide some form of plan by which to consider the educational experience obtained from a study of history and the expected behaviour of pupils.

Factors in Historical Learning

In view of the suggestion offered earlier concerning the importance of knowledge and a grasp of chronology in developing a historical sense, it may be worthwhile to examine these more closely.

Coltham and Fines do make an attempt to spell out the historical implication of their list. But they are chary of defining precisely such important items as 'Nature of Information' and 'Memorisation'. Under the latter heading they state that 'it would be unwise to try to specify . . . items—which *ought* to become part of the learner's mental stock in trade'. This term has an appealing ring, but may be interpreted by some as the result of learning by heart a body of facts which may or may not be meaningful, derived from dictated or duplicated sets of notes, and/or from 'the' textbook. And has not pupils' lack of interest in history been attributed to the deadening effect of this very process? Yet to appreciate fully Messrs. Sellar and Yeatman's forty-year-old masterpiece, which revealed a brilliant historical sense, readers need a considerable knowledge of history. The authors state in their preface, 'History is not what you thought. *It is what you can remember.* All other history defeats itself.' Has the challenge ever been satisfactorily refuted, or do not the majority of history teachers and their pupils continue to strive after the good sound learning which will be put to the test at the end of their course? In recent years there has been increasing emphasis on the study of history as evidenced by the

stimulation of discovery methods in which pupils can examine primary source material of all kinds both within and outside the classroom. By means of projects they can savour some of the pleasure of drinking deep of the Pierian spring. Activities of this kind can be assessed in terms of skills, techniques, understanding and insight acquired. It seems to be generally held that this approach relieves pupils from the over-heavy burden on the memory involved in mastering a body of knowledge. Perhaps this belief needs closer consideration. If pupils are asked to interpret photographs, diagrams, or extracts from documentary evidence, questions must be framed in such a way as to elicit a grasp of the subject matter in its historical context, otherwise the answer takes the form of a comprehension exercise. The project may consist of well-chosen and organised material pleasantly presented: an oral test could, however, show the pupil's degree of understanding or lack of it. Moreover, much of what some writers describe as 'understanding' (e.g. the causes of the first World War), consists of views received by the pupil at second or third hand from his teacher or the text-book, and as conscientiously memorised as the names of the foreign ministers of the great powers.[1] Real understanding seems to require wider reading and an ability to marshall, discuss and evaluate evidence of many different kinds in the chosen field of history. Is not command over material, therefore, an inescapable requirement of historical study?

The next and at least equally difficult question which Bloom, Coltham and Fines leave unanswered is, of course, 'What material?' To be more explicit, 'What history do we teach, to which pupils at which ages, to what depth, by what methods, and according to what criteria?' It is beyond the scope of this article to treat all these basic questions in detail: each provides matter for wide discussion and interrelated consideration. A few possible lines of approcah might be suggested. For example, answers to the first question, 'What history do we teach?' may be grouped under any of the three following headings:

(a) geographical area, e.g.
- local history
- British history
- European history
- world history

(b) period, e.g.
- ancient
- mediaeval
- modern

} Specifying century or centuries, preference for longer or shorter periods

(c) topics or aspects, e.g.
- political and constitutional history
- social history
- economic history
- religious history
- military history
- history of science/technology
- history of visual arts and music
- history of literature/ideas, etc.

[1] Moore R. J., *Multiple-Choice Objectives Test in the Ordinary Level Examinations in History*, University of London, University Entrance and Schools Examination Council, Conference Report, 1970.

The answers to these questions will be affected by the intellectual development level of the pupils and here three factors are important. The first concerns the growth of a time sense and whilst it may be possible to improve an understanding of chronology by good teaching, for some pupils full understanding of historical time may not develop until about mental age sixteen. The second factor relates to general conceptual development and here the results of Piagetian type research have confirmed the practical experience of many teachers that the formal operational level of thinking in history is a relatively late development occuring about mental age sixteen. The number of variables to be presented simultaneously to pupils at different levels of thinking also needs careful consideration if confusion is to be avoided. Four have been suggested as appropriate for pupils at the concrete stage in thinking with a corresponding later increase as the formal stage is reached. The third item concerns the importance of language in the development of historical thinking and the mental confusion which can arise when language of too great a degree of sophistication for the intellectual development level of the pupils is used by those concerned more with the subject than with the pupils taught.[1]

Various deductions may be made. First, for most pupils in secondary schools history should be 'concrete' in nature: if complex abstract concepts are presented on which deductive thinking is required then pupils will reject them or lose interest. Second, at the chronological age of 16 + when external examinations are taken some able pupils will have attained the formal operational level of thinking, but others will be at the concrete stage. Third, the suitability of the language used in teaching and examining will require careful consideration, for the definition of such terms as e.g. 'justice' or 'democracy' or 'parliament' may present difficulties even for more mature minds.

If these matters are applied to the actual construction of history syllabuses for this age group, the implications for content selection are far-reaching. Familiar themes such as parliamentary reform, the growth of trade unionism, the free trade movement and tariff reform, the Eastern question, the rise of Hitler could be unsuitable for many pupils if treated at the formal operational level. Should they therefore be jettisoned, to the detriment of the abler pupils, retained to confound and deaden the interest of the majority, or should they be treated in a much simplified manner? In general, history teachers have been working in recent years on the assumption that both choice of subject matter and methods of treatment ought to be influenced, if not governed by, the age, ability and interests of pupils. This belief, for example, seems to have dictated the choice of British economic and social history since 1700 for less able candidates despite its repeatedly unfortunate consequences in terms of external examination results, whether GCE or CSE.

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[1] Jahoda G., *Children's Concepts of Time and History*, Education Review, University of Birmingham, February, 1963; Hallam R., *Piaget and the Teaching of History*. Education Reserach, NFER, November, 1969; De Silva W. A., *The Formation of Historical Concepts through Contextual Clues*, Education Review, University of Birmingham, June, 1972.

1971 summer examination results in English economic history at
(a) GCE 'O' level: 15,791 passes out of 33,788 entries: 46.7%
(cf. 57.8% passes in history)
(b) CSE: 667 Grade 1 out of 5,445 entries: 12.2%
(cf. 14.7% Grade 1 in history)
(HMSO Statistics of Education 1971, Vol. 2 pp. 69, 65).

It would be interesting to enquire in how many schools this syllabus is chosen for the ablest group of history students. The excision of much political, constitutional and often theological history tackled by the abler pupils and the substitution of 'costume', 'transport', events with a strong narrative line or dramatic incident are common enough practices without reference to examination work. The rejection of a syllabus thought to be inappropriate and irrelevant and imposed externally by those unacquainted with the pupils' needs was the *raison d'être* of the CSE examination, more especially perhaps of Mode III, and basic to the reformers' concepts. It is the more interesting to note a recent uncompromising contradiction of these views by Gunnar Andar,[1] Uppsala University: 'We are not in a situation to choose in history teaching what seems to be the best, psychologically or educationally. We are forced to teach what is necessary for our pupils to learn. And in this respect we are determined by the world situation as a whole.' It is doubtful whether most history teachers in this country would embrace such a creed without reservation; but is it not an implicit factor in the marked trend towards a study of world history in the twentieth century in the fourth and fifth years of secondary education, or earlier still? Admittedly, however, this particular trend is more frequently justified on the grounds of 'relevance'.

The answer to the question 'What history do we teach?' should also be sought in the affective field, where a historical sense may be cultivated by the development of the ability to identify imaginatively with past individuals, groups and societies, with their problems, triumphs and disasters. By the selection of appropriate themes, concepts of increasing complexity may be developed in accord with deepening emotional maturity and increasing knowledge. But the selection of material suited to pupils' maturity levels is difficult: influenced by the teacher's interest in a particular aspect of history, his conception of the relative importance for study of major topics, and the differing intellectual and emotional needs of pupils of different ages and ability from varying social, racial and geographical backgrounds. Furthermore, these factors have to be considered in the crucial contexts of the varying length of time available for history in schools and of pupils' changing adolescent attitudes towards adults and society. For example, if the question is asked, 'At what age and in what manner should the work of Alfred the Great, the English Civil War, and Gladstone's dealings with Ireland be introduced into the syllabus?', would a general consensus of suitability emerge, and would the question's underlying assumptions pass unchallenged? Apart from its exclusive concern with national affairs and the implication that Gladstone may require greater mental maturity than Alfred, the question exposes a fundamental conflict: whether certain historical topics,

[1] Andar G., 1971, *The Need of World History*, Yearbook of Swedish Education.

however adapted in treatment and however desirable for other reasons, may inherently discourage interest in some pupils, while other topics strengthen motivation.

Choice of Methods

The points mentioned above may also have a direct bearing on the choice of methods of teaching. Less able pupils may respond best to audio-visual material: television and radio programmes, film-strips, photographs, museum exhibits, field-work and visits to places of historical interest. The making of historical models, dioramas, collages, and participation in the dramatic recreation of historical events may prove their most effective means of gaining an insight into the past. The discovery method which requires them to investigate and compare the evidence available in books of many kinds, documentary extracts from both primary and secondary sources, audio-visual materials, artefacts and field studies, may introduce so many variables that pupils are overwhelmed and produce ill-arranged copied work. This is not to say that abler pupils must be restricted to talk and chalk (which appropriately handled, can evoke a ready response among the less able), to the study of sources, and to discussion of such complex issues as the extent to which the difficulties of the Weimar Republic could be attributed to the Treaty of Versailles, 1919. Nor is there any implication that the upper intelligence band must be denied opportunity to appreciate aspects of cultural history or to act in historical drama. But certain purely practical factors are inescapable and may be decisive: the amount of time available in periods per week for teaching history; the availability of materials and resources (e.g. the proximity of a good museum); not least, the competence and special historical interests of the teacher. These can impose conditions on the content and method of study which may either assist or hinder pupils in their realisation of potential.

Assessment Consequences

In reviewing possible combinations of content and method most suitable for a wide ability range in which assessment should follow and not determine what is taught, history teachers appear to be faced with certain outstanding issues in relation to assessment. These may be summarised as follows:

It would seem that specific objectives for the teaching of history must vary according to the factors and circumstances discussed above. In the cognitive domain, such advanced forms of pupil behaviour as 'extrapolation' and 'synthesis' (cf. Coltham and Fines analysis, section C), or 'comprehension of concepts' (cf. Bloom's analysis, Cognitive section), could validly be expected and tested (after an appropriate course), in some sixteen year olds but not in others. Perhaps if history teachers do pursue different objectives with different pupils, it should be neither possible nor desirable to set all a common form of assessment. For example, is it possible to set questions which will simultaneously assess the concrete and formal operational levels of thinking?

The hypothesis of different aims and levels of thinking may be countered on the grounds that although specific objectives may vary, history teachers must share a general objective universally applicable to all pupils. This aim is to ensure that pupils enjoy history and develop a life-long interest in the subject: a thoroughly commendable

aim to which every subject specialist might well give priority. Historians in particular may consider this the most important objective of all in view of the adult nature of the equipment required for a full understanding of the complexities of adult behaviour in societies. It is an objective which in any curricular analysis, would find a place in the affective domain of pupils' behaviour, and is, in fact, so included by Bloom.

This last point again poses problems in the field of assessment. Whilst examiners are increasingly conscious of the need to state aims and objectives, to set out in full the abilities that each examination aims to test, to weigh carefully each ability defined and to know the possibilities afforded by the use of such techniques as continuous assessment, objective multiple choice testing and the project; the difficulties in the way of assessing the affective sector are self-evident. Although specialised techniques such as the assessment of attitudes are known, their availability is limited, and in practice it would be useful to identify and study any existing tests which claim to assess the affective domain in history in an accurate and reliable manner. Difficulty in assessing in this area may prove a formidable obstacle in the path towards a common examining system since (i) interest is a primary outcome which all pupils should be expected to possess in varying degrees, and (ii) difficulty in assessing interest could debar the less intellectually able pupils from achieving recognition of quality in the affective sphere (as distinct from the currently tested cognitive domain).

Finally, if the accurate measurement of interest at school is difficult how much less likely is it that a terminal 'end of course' assessment at this stage could accurately predict a life-long interest? Such reasoning may reinforce a belief long held by some teachers, that the most important values derived from a study of history may well be unexaminable under any system.

A report on remedial methods from the London borough of Hounslow

Helping Slow Readers

M. C. TYSON

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The London Borough of Hounslow has a school population which is about the average size for a Greater London Borough.* The total school population comprises 33,277 children, of whom 12,658 are in secondary schools, 19,844 in primary schools (either separate infant and junior schools, or schools covering the full primary age but usually in separate infant and junior departments) and 775 in special schools; there are 502 younger children also part-time in nursery classes or schools.

The primary schools employ a variety of methods in teaching reading—mostly mixed methods; there are some schools using i.t.a. and others *Breakthrough to Literacy*. Some primary schools have a large population of immigrant children, with one infant school having 67 per cent of immigrants in some classes in this current academic year. There are some special classes for immigrants, some with teachers who are themselves immigrants.

Annual returns are requested from head teachers of primary schools with the names of all children of junior age (specifying date of birth and reading age) who show a retardation of two years or more of reading age behind chronological age using the Schonell Graded Word Test or the Vernon Graded Word Test. Returns are requested in similar fashion for children of infant age who show a retardation of between 1.1 and 1.11 years of reading age behind chronological age. Unfortunately it is not always possible to obtain all the information requested, and there is some doubt at present as to whether methods of administering the reading tests are standard. However, some idea of the numbers involved can be seen from the following figures:

Total primary school population on whom returns were made: 18,430
No. of children retarded by more than 2 years (junior level): 1,164
No. of children retarded by between 1.1 and 1.11 years (infant level): 456

This last is a *minimum* estimate as returns are incomplete—this group will be mainly top infants class children.

To deal with this problem, in addition to those members of primary school staffs who are used specifically as remedial teachers at the discretion of the head teacher, a team of 30+ peripatetic remedial teachers is attached to schools. At present 14 of these teachers are full-time, the rest are part-time, and all are taking children in groups of not more than 6 children at a time for between 30 and 45 minutes daily in infant and junior schools according to need. Individual work is done if this is considered essential. One constriction on this work in

* I am indebted to Mr. V. Fisher, Assistant Director of Education, London Borough of Hounslow, and Mrs. M. Pears, Senior Educational Psychologist, School Psychological Service, London Borough of Hounslow, for much of the information in this report.

some schools is lack of space. The remedial teachers use as screening tools the usual reading tests and possibly some others related to skills necessary for learning to read which are available to teachers, such as those published by Daniels and Diack. They are doing what might be described as 'straightforward' remedial reading, giving extra reading practice and help to the children. The peripatetic remedial teachers are allocated to those schools with the greatest numbers of retarded readers, and may be shared between schools. There is a remedial teacher who is responsible for the co-ordination of the team. She is from the Borough's own service but has completed a child development course at the London Institute of Education. She spends half her time with remedial groups and half advising the other teachers and arranging further training for them.

It is hoped that information about children with a reading difficulty will be passed from junior schools to secondary schools, so that remedial departments will be able to give the necessary further help. Each of the nine comprehensive schools has a remedial department but these vary very much in size and strength according to the philosophy of the school. There are remedial classes in some, others rely on a system of withdrawal for extra help, and most on a judicious combination of both. In the summer of 1972 information was obtained on the numbers of first year secondary children having language difficulties including reading problems. As expected, there were no such children with these difficulties in the grammar or grammar-level RC schools, but in the other secondary schools, out of a total of 2,256 children, 312 were considered to be having difficulties. Percentages again varied from school to school, from 3 per cent to over 20 per cent. An examination of the geographical location of the schools in the Borough shows that there is a tendency for certain areas to have larger numbers of retarded readers; these are more especially the areas of predominantly working-class settlement, but include also areas of greater immigrant settlement.

More Specifically Retarded Readers

Where the child's problems in learning to read are more severe than the remedial teachers are able to tackle alone, a more intensive level of remedial help is provided, in some cases somewhat akin to that formerly given at the Word Blind Centre in London. Children with severe reading disabilities in both primary and secondary school age groups are helped by two part-time remedial teachers at the School Psychological Service premises in the Health Centre, which provides intensive teaching on an individual basis, dealing with a case load of about 40 per week. It is considered by the Senior Psychologist and the teachers that at present two of these children have difficulties so severe as possibly to be included in some type of category such as 'specific developmental dyslexia' although that term is not employed. As is to be expected, there is a heavy overlay of emotional difficulties with many of this group, some part of it at least arising from their failure to cope with specific learning situations relating to reading both at school and at home.

One further provision at primary age is a small full-time special class (broadly termed 'for children with specific learning difficulties'). There are six children in this class, in the age range 8 to 12 years. Apart from the majority having had severe difficulties in learning to read in spite of skilled part-time remedial help, all the children have

other problems also. All have previously received extra help from highly qualified teachers, or speech therapists, physiotherapists or myself in conjunction with some of these others. The class was created over a year ago because it was realised that a full-time remedial environment was needed for this small group, who could not be placed appropriately in any of our day special schools. They have two full-time remedial teachers. One of these was appointed to the class from the outset, and was an experienced remedial teacher from a special school. To assist her and to provide a form of in-service training there is one other teacher from the Borough's remedial service. It is aimed to give several of the Borough's remedial teachers this experience, and it is hoped also that in this way continuity for the class can be provided. A rather slow and structured method of learning to read simultaneously with learning to write is used, and so far it shows good results, except that the boy with a severe disability in understanding language is now more advanced in mechanical reading than in comprehension.

There is also a small mornings-only developmental/diagnostic class which is run jointly by a teacher and a speech therapist. This is mainly for pre-school and infant reception class children who appear to be strongly at risk of educational failure by reason of severe language retardation and sometimes also visuo-motor difficulties. The teacher is a former physical education specialist. A good deal of work on pre-reading skills is carried out as part of the daily programme. Most children come on either two or three mornings a week and the maximum number in a group is five.

Three of the special schools have additional remedial teachers on their staff.

Screening

As should be apparent from the description above, screening for reading difficulty takes place at various levels. Initially it is done by the school, using standard reading tests, and children are offered extra help on the basis of information obtained in this way. Children who make little progress in spite of the extra help are referred to the educational psychologist. These children receive further screening, using a variety of tests, including tests of intelligence, tests examining specific aspects of development such as language, visuo-motor integration and memory, further attainment tests and possibly assessments of adjustment such as the Stott inventory. Various courses of action are then possible:

(a) advice to school and remedial teacher on further remedial help;
(b) more intensive remedial help at the School Psychological Service premises;
(c) offer of special school placement if justified, e.g. ESN;
(d) referral for further examination by myself or various specialist facilities.

At the most detailed level of screening, no set group of tests is used, although very many (between thirty and forty) are available if it is considered that they are appropriate. There is enough research data available to suggest that not all children with extremely severe reading disabilities show similar concomitant disabilities in other areas, i.e. there may be some children with difficulties similar to those seen in Gerstmann's syndrome (finger agnosia, difficulties in right/left discrimination, etc.) but there are others whose difficulties in areas

other than reading seem to be related to other aspects of functioning such as symbolic processing in language, sequencing, etc.

Training of Remedial Teachers

Not all the peripatetic remedial teachers have at this time the high level of skill in diagnosis and teaching which is hoped for eventually. At present some are highly proficient and others are comparatively inexperienced. Therefore the urgent need now is for training for the inexperienced remedial teacher in those specialised skills which distinguish the remedial teachers from the good class teacher, and further training to widen and deepen the knowledge of the proficient members of the team. The School Psychological Service, in conjunction with the Warden, has set up a permanent exhibition of reading material and a library at the Teachers' Centre. Materials and books can be withdrawn and used by remedial teachers. They are asked to evaluate the materials they borrow and to report back to the team on the practical aspects of their use in groups. Seminars and discussions covering various aspects of the remedial reading process have been run by the School Psychological Service at the Teachers' Centre, and continue to be held there. In future some will also take place during school hours to help those remedial part-time teachers who have heavy home commitments. Some teachers have been seconded to various full-time courses on child development or handicapped children, but what would appear to be needed now are some short intensive courses specifically on the teaching of reading and remedial reading.

Monthly seminars for all staff of remedial departments in secondary schools are held. The subject matter is confined to the discussion of individual cases presented by each member in turn. Examples of the pupil's work, tape-recordings of his speech and reading, and as much information about his home background as is available, form the basis of the ensuing teach-in. There is a fairly uniform level of expertise among the members of these remedial departments and the teaching of basic concepts is rarely necessary. Reading problems of older children however are severe and of long standing and a high level of sophistication and competence in remedial techniques is needed to deal with them effectively.

Research

In 1969 and 1970, about 450 children due to start school in September were seen in July and August by a group of medical officers, audiometricians, speech therapists and psychologists. Motor development, hearing ability and levels of language understanding and production were examined. These children are now in the top infants and early junior classes and we are in process of obtaining information from the schools as to how they are faring and what reading levels they have achieved. If this early screening proves to have predictive value, it may be possible to widen its scope.

A small group of Greater London psychologists including three psychologists of the Borough's School Psychological Service and myself are attempting to repeat the tests found predictive of reading failure by Katrina de Hirsch, with a few children in their first term at infant school. This data will be put aside for a couple of years but checked when the children are due to tranafer to junior school, to see if what was predictive for New York in Mrs de Hirsch's study is relevant to Greater London.

A research report spotlights a neglected factor.

Aspects of Programmed Learning*

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It is fashionable to draw flow-diagram representations of teaching machine systems, to label one area of the diagram 'student', and to speak of the area as though it were a reliable component in the system. Yet, as I have argued elsewhere several times, the student is not always in a position to behave in a reliable way: his behaviour is determined by a host of internal and external pressures. Many theorists in programmed learning appear to forget research on social facilitation, contagion and conformity or, putting it more simply, they appear to forget that students can usually see and talk to each other, and to their teacher. At an international conference 'Major Trends in Programmed Learning Research' sponsored by NATO in 1968 it was noticeable that no speaker considered the reliability of the behaviour of the student and that only one ascribed the sole differences that he found in his experiments to the over-riding influence of the teachers involved.

It is now becoming clearer that the teacher—whose influence, of course, has always been omitted from flow diagrams—can exert an important effect on the results of programmed learning. An American study by Goebel (1966) reported that teachers in a programmed learning setting spent 68 per cent of their time dealing with individuals (as opposed to 3 per cent in the conventional setting). Furthermore, of twelve experiments known to the writer which have compared programmed instruction alone with programmed instruction 'integrated' with conventional instruction, eleven have found the latter situation to produce better results (Hartley, 1972). Work in other fields (e.g. educational television, reading, and creative writing) has also indicated the importance of the teacher.

It is not my place here to comment on the role of the teacher in programmed learning: this has been well done elsewhere (e.g. Thiagarajan *et al.*, 1971). In this paper I wish to look in particular at two social aspects of programmed learning—namely (i) programmed learning in pairs and (ii) programmed learning in small groups. I wish them to conclude the paper with some more general comments on social aspects of programmed learning.

Learning in Pairs

There has been considerable research interest in the advantages and limitations of programmed learning in pairs, and a number of experiments in this area have now been carried out. It has been argued, for instance, that compared with individual programmed learning,

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programmed learning in pairs has the advantages of (1) greater economy, (2) less boredom for pupils, and (3) greater inter-personal interaction leading to (a) better learning, and (b) increased retention. In short, programmed learning in pairs is seen as valuable not only for its obvious economic implications, but also because it introduces social interaction into programmed learning.

However, we must be cautious before we consider these advantages to be automatic benefits. Advantage (1) can only apply if the pupils share the same program and equipment. Experimental support for advantages (2) and (3a) is limited, and the evidence for advantage (3b) is almost nonexistent (Hartley, 1968, 1970). The little evidence available does suggest, however, that programmed learning in pairs *is* a viable proposition: pupils learning in pairs usually do no worse than pupils learning as individuals, and sometimes they do better.

If this is accepted, then the next question becomes whether some methods of pairing lead to better results than do others. This is an important question to ask, because in a class of 30 pupils there are 435 possible pairs, and, no doubt, each pairing would produce different interpersonal exchanges. In practice, however, there have been two main approaches to this problem. Investigators have either paired students on the basis of ability or prior knowledge of the task in hand (or they have combined these measures), or they have paired pupils on the basis of some personality measure (e.g. extraversion-introversion). Both of these approaches, however, have had the same aim —to see if one method of pairing led to better results than did the other. In addition, in most of these previous investigations, each member of the pair studied the same program and thus programs written originally for individuals were used in paired work.

In this paper I wish to describe the results from three of our several pairing studies (mainly because they contain larger numbers in each experimental condition than do those of other investigators and hence they may be considered more reliable). In Experiment One we paired on the basis of ability, using a program written for pairs. In Experiment Two we paired on the basis of a personality measure, using the program written for pairs: and in Experiment Three we allowed pupils to choose their own partners and we compared the performance of these pupils with that of pupils paired by the teacher.

Much of the previous research on pairing by ability has been summarized by Hartley (1970). The aim of seven of the studies reported was to discover whether or not pairing a low- with a high-ability pupil significantly helped the poorer one without hindering the better one. Following this literature review, it was concluded that three studies which favoured mixed-ability pairing in this respect tended to use primary school pupils with a wide ability range and to utilise programs that involved them in 'activity' or 'discovery', whereas the remaining studies which found no advantage for mixed-ability pairing tended to use secondary school pupils with a narrower ability range and to utilise more 'straightforward' conventional linear programs.

In the first study I wish to consider in this paper (Hartley and Hogarth, 1971) over eighty pupils from four unstreamed second-year classes in a single-sexed (boys) grammar school took part as subjects (age range 12:1–13:11 years), and they were divided into mixed-ability and like-ability pairs on the basis of previously obtained intelligence test and

achievement data, end of year school examination results, and pre-knowledge of chemistry. The program used in this experiment was Hogarth's *The Gram Atom* (unpublished), a linear program of some 120 frames, which is divided into three parts and provides approximately 2½ hours instruction. The subject matter of the program is concerned with demonstrating that if the atomic weights of the elements are expressed in grams then these weights all contain the same number of atoms. The pupils, after they have completed the program should be able to compare the numbers of atoms in any given weights of different elements: in brief, the program concerns itself with a topic that pupils often have some difficulty in grasping. The program is unusual in that it is especially written for paired work. In Part One, for example, each pupil has his own (different) textbook, with separate instructions for practical work, and each in turn has to check the work of his partner: at the end of the program pupils are required to set each other problems. The test used to measure the amount learned from the program consists of 14 questions, it is marked out of 25, and the test re-test reliability coefficients so far reported range between 0.75 and 0.88.

The pupils worked for two 40-minute periods per week, at their own rate, and the four classes were supervised by different teachers. The post-test was given immeditaely upon completion of the program, and the same test was administered between three and four weeks later in order to assess retention. The results obtained were quite clear-cut: there was no significant difference between the performance of the low-ability pupils working with low-ability or high-ability pupils, and there was no significant difference between the performance of high-ability pupils working with high-ability or low-ability pupils, either on the immediate or the retention test. (Overall, however, the high-ability pupils performed significantly better than the low-ability ones, $p < .01$.) The time differences between the groups in completing the program were in the expected direction (i.e. the high-ability pairs were the quickest and the low-ability pairs the slowest, but the differences between the groups in this respect were not significant). One interesting finding in this experiment, however, was that the high-ability pupils in the mixed-ability pairs expressed less favourable attitudes to the situation.

In Experiment Two (Hartley, Holt and Hogarth, 1971) we replicated the above experiment in the following year with the exception that this time we paired our students on the basis of a test of general 'academic motivation'. (The details of this test—and its limitations—are discussed in Hartley *et al.*, 1971.) In this study the post-test results were rather worse than those we obtained in the first study (which illustrates the problem of expecting this year's group of students to perform like last year's) but the same sort of experimental findings resulted. In brief, low-motivated pupils in mixed-motivated pairs did not perform significantly differently from low-motivated pairs working together, and high-motivated pupils in mixed-motivated pairs did not perform significantly differently from high-motivated pairs working together, either on the immediate or the retention test.

In Experiment Three (Hogarth and Hartley, 1973), a year later, we again repeated our basic design, but this time half the pupils were formed into mixed-ability pairs by the teachers and the other half were left free to choose their own partners. The overall results were better

than those obtained in Experiment Two and were in fact parallel with those obtained in Experiment One. However, as before, there were no significant differences on immediate or long-term testing between the performance of the teacher designated mixed-ability pairs or the own-choice pairs. The own-choice pairs, however, expressed a more favourable attitude to the situation.

This study, of course, like the others, raises more questions than answers. Its results are contradictory to those obtained by Amaria (1970) who found (with slightly younger children and a different, shorter program), that learning was significantly better for pupils paired at random than it was for pupils paired according to their choice. Referring back to the introduction to this paper, there is clearly a need for more research in this area. A teacher could adopt a number of different strategies for pairing pupils and each of these could be systematically investigated. In particular we might expect that pairing based on the teacher's knowledge of the children would be advantageous.

The experiments described above are—in my view—despite their limitations, the most extensive and the best controlled studies on programmed learning in pairs yet reported. It is clear from them—and from the previous research—that a number of factors could affect the results as well as the method of pairing (e.g. age and age differentials, sex, streaming or setting policies within the school, program type, quality and length). It is also clear from this research that it is now unlikely that there will ever be a simple rule of thumb for determining the best method of pairing learners for programmed instruction. These results are, therefore, disappointing if one is looking for a simple way to improve learning, but considered in another way, they may be pointing to the suggestion that teachers need not bother to spend time devising sophisticated methods of pairing. This suggestion is clearly drawing too firm a conclusion from such a limited number of studies carried out with such a specific program and target population, but (except for those of Amaria) the findings are in accord with the previous research which has failed to find differences in post-test results at the secondary level as a result of the pairing method.

Learning in Small Groups

There is in the psychological literature considerable, if somewhat scattered, evidence which demonstrates the superiority of group learning over individual learning in a variety of situations, both animal and human. It would seem appropriate, therefore, to see if this generalisation also applies in programmed learning. The difficulties of trying to reach general conclusions from this kind of research in programmed learning are (i) that there is variation in the sizes of the groups, and (ii) that there is variation in the methods of work adopted within the group. For example, groups might be small, co-operative, and self-paced, or they might be large, with each member working individually, and yet be externally-paced (all, for example, responding to a projected filmstrip).

To date most of the programmed work on group learning has been carried out with programs originally written for individuals rather than specifically for group learning. However, instructional programs written for small groups which make the members interact are now beginning to appear, both in the USA and in the United Kingdom,

and there seems to be scope for future work here. Actual experimentation on different compositions of groups, and on the functions and personalities of the members has not been done, and it would appear that these basic aspects of group programmed learning have yet to be pursued.

Where programs written for individuals are presented to groups, then a key problem is the technique of presentation: a variety of methods has now been used and each has its own difficulties. The major problem with an unpaced group presentation is, of course, that the group progresses at the rate of the slowest student. Thus studies have shown that homogeneous groups generally proceed more quickly than do heterogeneous ones, although it is by no means clear yet what are the limits in this respect.

To overcome the problem of proceeding at the rate of the slowest student various techniques for pacing students have been devised. In some studies the teacher loosely controls the pacing rate (e.g. by allocating the number of frames to be completed per lesson). In other more precise studies pupils work in groups, usually reading from a central display which is externally-paced; however, in other large group studies, e.g. Moore (1967), the group also controls the pacing rate. The main purpose of much of this research on externally-paced group programmed learning appears to be to demonstrate that self-paced instruction is not *necessarily* a basic principle of programmed learning, and that more efficient means of presentation can be used. With paced group instruction not only can a wider audience be reached simultaneously, but also administrative difficulties consequent upon self-pacing (e.g. pupils completing their programs over a wide range of time) are minimised.

In summarising this research it appears (i) that the experimental evidence does suggest that moderate external pacing is as efficient as self-pacing (or more so, in terms of time taken); (ii) that the same evidence also suggests by implication that self-pacing may have limitations—students may not, in fact, be able to judge for themselves just what is an effective pace at which to work (Gropper and Kress, 1965, for example, showed that students' rates of work were relatively constant despite variations in program difficulty); and (iii) that external pacing may introduce factors (such as increased motivation) which might lead to improved learning. Each of these points has been discussed further elsewhere (Hartley, 1968).

Social Aspects

In the paragraphs above I have restricted my perspectives to experiments carried out on programmed learning in pairs and groups. I would now like to turn in the space permitted to make a number of more general observations.

Programmed instruction has the heady image of being a self-instructional process which is self-paced. This paper has tried to indicate that there are situations where these (admittedly often powerful) advantages may be superseded by even greater ones. In addition to the advantages which result from interaction (paced or otherwise), I would want to argue, for example, that it would be a folly in programmed learning to ignore the facilitative influences of teachers. Simply put my point is this: programmed learning need not be self-instructional, and it need not be self-paced.

However, the research literature on pairing and pacing contains many studies finding 'no significant difference'. I naturally wish to argue that this means we need to look more closely at the tests we use (rather than reject the idea that manipulating social variables results in benefits). The tests used in the studies reviewed have been almost entirely tests of *cognitive* achievement. It is important, however, that in the pairing studies we have carried out, we have found no differences in cognitive achievement, but we have found attitudinal differences. Two things appear to follow. Firstly, as researchers, we could pay more attention to measuring *affective* outcomes—for this is what the studies I have been discussing in this paper are really all about, and that is what has been neglected. Secondly, as researchers, our tests of cognitive objectives need not be as trivial as they often are: more attention could be paid to *higher-order* cognitive objectives (e.g. evaluation, analysis and synthesis etc.). By getting students actively to co-operate on mutually challenging tasks, by involving them in communication —written and verbal, in guessing and discovery, in discussion and in decision making, by allowing our pupils to be persons framing and answering their own questions, we can use our work on the social aspects of programmed learning to see if both affective and higher-order cognitive objectives are achieved. To do this implies a broader perspective in the field of programmed learning. Although we can still state our objectives, evaluate our success in achieving them, and revise and improve our courses, I feel that in programmed learning the objectives, the teaching methods, and the methods of evaluation need not be prescribed as narrowly as they have been in the past.

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The impact of adult activity in education is reported from four contrasting localities.

Adult Education and Social Development

K. T. ELSDON

K. T. Elsdon, HMI, has a special responsibility for adult education.

Adult education, as the Russell Report[1] reminds us, spells the enrichment of personal leisure, a chance for a new career, relief from loneliness and a great many other things for a very large number of individual participants. Its personal value is evident, and there are enough case histories to illustrate its contributions to wider fields through the knowledge and skills which particular people acquire in it. Projects to assist particular areas of deprivation, or to serve handicapped groups of various kinds are being reported frequently. There may be rather less awareness of the ways in which adult education institutions may be contributing in a more general way to the whole life and atmosphere of local communities which they serve and of which they form a part. It would require intensive longitudinal research by interdisciplinary teams to establish the facts on this with precision; such exercises would be of great value. This article attempts no more than some brief, impressionistic, and inevitably superficial vignettes to illustrate this broader contribution of adult education. Its choice of institutions is dictated by chance and there is no suggestion that they are unique, or could not be paralleled elsewhere.

The Rockingham Institute of Further Education is one of the West Riding's area organisations for adult education, and serves part of the South Yorkshire coal field with all its environmental and social problems. Its headquarters is the Mechanics' Institute at Wath-upon-Dearne, a building which has been attractively modernised and converted over many years to form an area headquarters and a local adult education centre for the Wath Urban District. Beginning with much the usual collection of classes, the Institute gradually deepened and expanded its vision and its practice. It began by trying to improve the educational quality of its class offering, and this led to the establishment of substantial training schemes for tutors. It used a scheme of affiliation to find houseroom for local societies, and to help them in raising their sights and their standards. As classes mastered their subjects they were encouraged to turn themselves into self-programming groups and independent societies. A broader programme of activities made the centre aware of still further gaps in local life and provision. Some of these could be filled by class provision organised with the help of Sheffield University Extra-Mural Department and the South Yorks WEA District. Others involved co-operation with the social services and with the Urban District Council. Others again became the object of informal and voluntary action by members.

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[1] *Adult Education: A Plan for Development.* HMSO 1973.

A few practical consequences of these developments must suffice to illustrate the effects in the community. Both chronologically and in the context of the kind of area it is the first was the impact on a sufficiently large number of women to make, in the opinion of observers over the years, a perceptible difference to the area as a whole. Compared with other areas and their own past it has been suggested that they dressed better, took a greater pride in themselves and their activities, acquired not just greater skill but made greater demands in terms of design and quality in the whole of their domestic and personal spheres. They developed what is a recognisable local style in creative embroidery. They became more confident, and their status and activity in the local community altered over the years, as miners' wives and others realised that they were capable of changing the whole tenor of their lives and families, of acquiring demanding qualifications, of teaching, and of serving on committees.

Crafts and visual arts were not the only objectives of development. Starting from the support of existing choirs and bands, and tuition provided for them, new musical developments followed. Concert series, a musical festival, an area music centre were set up. Drama classes were provided to raise standards in existing societies. Under the influence of education and resulting popular demand it is not surprising that the Wath Urban District Council was one of the earliest authorities to set up a committee and vote funds for the arts, to provide a programme of events which was integrated with the adult education programme, and even to commission works of art itself.

Co-operation with the social services produced pioneer work in this field which is only now becoming common elsewhere. Voluntary educational and social work in residential institutions, work with the handicapped, support for rehabilitation in the community, individual counselling were taken on board as functions of the adult education service, and created general acceptance for new approaches.

One measure of the impact of these and other services to the community was the new town centre plan commissioned from planning consultants. It involved the demolition of the old Mechanics' Institute and the creation of a new one, at the very heart of the town, and linked with the social and administrative buildings which were considered to be of the greatest importance to its life.

* * *

Pilgrim College in Boston began life just after the war as a centre for responsible body classes—a function which it continues to perform. But the interests aroused and developed in these led to a great many developments beyond the classroom. Here, too, existing societies were strengthened and new ones sprang from class provision, and even cricket (not notably an academic discipline) received an impetus. It is at least unusual for members of both sides of industry to study industrial relations together as well as separately. Interest in architecture and the arts resulted in the discovery of the remains of a Dominican priory concealed in the shell of an old warehouse. From this sprang Blackfriars Theatre Ltd—a voluntary body linked with the College which has provided Boston with an excellent little theatre, community centre, subscription rooms, and (most recently) art studios run and staffed on community workshop principles. Professional drama and music as well as amateur activities have their homes here, and local

artists are becoming something of a colony which has real contact with the public. Local doctors are receiving assistance in learning how to train new general practitioners; part-time teachers are being trained for all the adult institutions in the area. Here again one can point to developments, but it is difficult to provide hard evidence of cause and effect. Yet how many small towns are there in which people of every age group and all social backgrounds mix and co-operate as they do in Pilgrim College and Blackfriars? How often do we find highly qualified individuals who deliberatly refuse opportunities of improvement or promotion rather than leave the social, cultural and educational opportunities provided by a small and remote market town? And how often are such opportunities quoted as inducements in advertisements for managerial posts?

* * *

Glossop, in recent years, faced not merely the crisis of confidence caused by the demise of much of its original industry, and its partial replacement by mainly unskilled work and jobs for women, but its own partial conversion to dormitory status for the Manchester conurbation. In addition it had an overspill estate devoid of the necessary facilities placed near enough to become its problem and far enough from the old town to aggravate it for all concerned. At Wath and Boston exceptional developments had followed from normal staffing practices. At Glossop, the Local Education Authority recognised that a critical situation required learning on the part of the community involved in it, and that this meant special action and resources. It therefore injected what was (relatively speaking) a substantial team of adult education and youth and community workers into the town. Solid preparatory work had been done by a strong and well established WEA Branch and its tutors, and close co-operation with it was established at once. The Local Education Authority contributed further by converting a redundant town centre school into an adult education centre, creating special youth provision, and co-operating with the authority in the establishment of one set of buildings on a school campus and, with additional voluntary funds, in another centre on the overspill estate.

A distinguishing feature of the provision was that, whatever the subject or activity concerned, the providers invariably sought to stress factors of involvement in that activity, and in the responsible running of it.

One consequence of this policy is that, at the last count, there were at least 35 voluntary organisations which had started from centre activities and were still housed there. Others had moved beyond this stage into premises of their own, while maintaining informal links and receiving tuition or administrative services when they needed them. Some 18 per cent of the total population were involved in regular activities provided or directly sponsored by the centre. While such statistics are impressive, the important feature is the direct link between learning and responsibility: responsibility and independent action are seen and taught as essential features of the educational process regardless of its subject content. This will be as true of the community development worker on the overspill estate helping people who had lacked the necessary skills to learn to express themselves, identify their requirements, and organise themselves to help provide them, as it was of formal class provision.

However satisfying each aspect of such a varied range of formal and informal activities, the learning processes in a community were fundamental to them all, and it was in their service that the energies of volunteers and professionals were harnessed. The Glossop Festival —well supported by the authority and voluntary sources—was perhaps the most spectacular way in which the community signalled to itself its returning confidence. The difficult problems of the overspill estate are being tackled, play groups are being fostered, provision is being made for the handicapped. In these and many other instances it is local people who are acting for themselves and upon their own responsibility. But it is the centre which has provided ideas, taught methods, helped with communications, or given services. Crucial and yet retiring, it has capitalised on the potential of its community rather than providing it with crutches.

* * *

The three examples which have been described so far have one major common chracteristic: they are all relatively small. A single institution, one or a few workers, given support and facilities, could know and penetrate their communities. The results in terms of behaviour, activities, and bricks and mortar could be identified. A large city, on the other hand, places formidable obstacles in the way of any observer, but adult education, though part of a more complex web, can play an equally effective part. Started to provide useful or harmless occupations for unemployed men, what has become the Bethnal Green Institute of Adult Education now provides a large and varied programme of classes, but also sees itself as a means of fostering social and community skills in its parish. Its long tradition as an institution not unlike a settlement, in which help, advice and counsel could always be obtained, contributes on an individual basis. But some of those most in need are unable to accept help in that form, and the centre, through its staff, has felt the need to go out to them and either strengthen their organisations, or help create them. Thus Asian immigrants—and especially their wives—would only accept language teaching on their own terms, and sometimes only in the context of their own cultural activities. The Institute saw this as an opportunity rather than a limitation: its assistance in fostering Asian cultural life brought the gradual acceptance not only of the need to learn English but even of the superiority of English as taught by natives. The acceptance of a counselling function among the most deprived led, eventually, to the formation of classes and of welfare rights groups. The churches, the settlements, police, social workers, and indeed the various informal groups which have developed from the Institute's classes turn to it for skills, services, the odd talk or the systematic class. It enables them to continue or expand and vary their services to the community in which the Institute is both one of the nerve centres and an important source of energy.

* * *

Examples such as the four which have been described illustrate something of the sheer range of adult education involvement in the community far beyond the formal programme of classes. An effective adult education institution will have close and creative reciprocal links with the arts, community development, the social services, sport and physical recreation. It may be one, or the major provider of one or

all of these. It serves, teaches and changes individuals who are making decisions, bringing up children, voting, playing and working *now*. Thus it also affects the communities of which these individuals form part. The substantial and indeed dramatic changes in some communities which have been described are certainly not changes for the worse. Some at least can be shown to have economic as well as social and educational implications. What is remarkable is how small an investment of skilled manpower and other resources can, in this context, release resources and create output which, socially and economically, are quite out of proportion to the original investment. The advocates and the addicts have always thought of adult education as a very pretty goose. It may be that anyone who subjected its eggs to a scrutiny rather closer than this article would meet with pleasant surprises.

TRENDS IN EDUCATION 1973-EUROPE ISSUE

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TREND-SETTER

International Baccalaureate

The International Baccalaureate (IB) is an experiment in devising a common sixth-form course for those who may wish to enter a university (or other educational establishment) in one of many countries. It is administered by the International Baccalaureate Office (IBO), a non-governmental organisation located in Geneva.

The seeds of the idea of a single course that could be taken in many countries were sown over ten years ago by a group of teachers at Geneva's International School. Considering the enormous difficulties of negotiations between representatives of widely differing education systems, progress has been surprisingly rapid.[1] The first full official examinations for IB were held in 1970: thirty-nine candidates from four international schools entered, of whom twenty gained a full IB. Ten of these had combined it with a French *baccalauréat*, and so were not wholly reliant on it as a passport to higher education; of the others, nine were accepted on the basis of their IB by universities in the United Kingdom, United States, Canada and the Netherlands.

The question of acceptability by universities was one of the cornerstones of the whole project. Serious efforts to secure recognition for the IB began in 1967, and this proved to be one of the most demanding parts of the whole operation. In the first place, two kinds of procedure had to be followed, since in some countries universities are under central control, while in others they run their own admissions systems. Then there was the desirability of gaining recognition from *all* the universities in a country, and from *all* faculties of individual universities. Negotiations as complex as this on a world-wide scale were beyond the resources of the IBO, so it was decided initially to concentrate on those countries to which a large number of international pupils were likely to want to go for their higher education, together with countries in which there was a school taking part in the IB project. This approach proved highly successful; it was later supplemented by individual negotiations with universities not included, but which an IB student particularly wanted to enter. To date, recognition has been gained from universities in twenty-nine countries.

A course in London

This is a brief account of the background against which the West London College opened the doors on its own first IB course in September 1971. The college was especially well-placed to take on this kind of venture: it has extremely diverse resources, good access to part-time staff for specialist subjects, and is very internationally minded, evidenced by the fact that over seventy nationalities are represented on the student roll. Of fifteen students enrolled for the first IB course, nine are now in their second year, which the college thinks is a reasonable proportion for so new a venture. Six of the students are from the United Kingdom, with one each from Germany, Italy and Somalia. The second intake, arriving in September 1972, numbers twenty-eight from places such as Greece, Nigeria, the Philippines (including three members of one family), Saudi Arabia, Switzerland, Trinidad, and Venezuela, as well as the United Kingdom. The Swiss girl is a notable capture, as five Swiss schools offer the course.

A point to make about them is that to qualify for a full diploma, candidates have to pass in all six examined subjects. However, those who pass in fewer are given a certificate of attestation showing the precise grade achieved in each subject. This should of course be valid for entry to further education courses below degree level, and can tell a potential employer

[1] See A. D. C. Peterson, *The International Baccalaureate*, Harrap, 1972.

what he needs to know about educational attainment. Three of the six examined subjects must be taken at Higher Level (approximating to A level) and three at Subsidiary Level (approximating to O level). The subjects themselves are: language A (the language of instruction); language B; study of man; experimental science; maths; one of the following options; plastic arts, music, an ancient language, a second language B, further maths (for those doing Higher Level maths), another subject under 'study of man' or experimental science, or an alternative programme approved by the IBO, to be offered only at Subsidiary Level. In addition, all students must do a course in the theory of knowledge; and one involving creative and aesthetic experience. The syllabus offered by West London College, under the above main headings consists of: English; French, German or Spanish; economics or history; biology; maths; psychology. The theory of knowledge course involves one period a week in the first year, two a week in the second. Subjects offered so far under the heading 'creative and aesthetic experience' include: dance; drama; painting; film appreciation; film making; and one girl is also doing A level art. The college intends to add to this list as viable groups can be formed and the necessary space provided. Social service activities are also encouraged: for instance, under the heading legal background to the social services, some of the students have done some fieldwork with Hammersmith Borough Council. One of the students spends an afternoon a week at a primary school.

Students

As one would expect, the students come from a variety of backgrounds, and cover an age-range from sixteen to about thirty; add to this their differing nationalities and you have a pretty thorough mixture. With the second year students, a strong group identity has emerged. Clearly the things they have in common have proved stronger than those which might have divided them —a hopeful augury.

Another striking fact was the sense of recognition many of them felt when they first came across the course. As Beata Landzianowska, a German girl, puts it: 'I was at boarding school, not really knowing what I was doing. When I heard about the IB, I thought "That's it!" And I was right.' Beata may go on to a polytechnic or university, but she's not going to be rushed into a decision. In two other cases, the young people were already doing sixth-form courses in England, but both felt they were over-specialising, without having a clear sense of direction: they too are thinking in terms of polytechnic or university, and thank the IB for helping them reach this stage. Jean Hodges, on the other hand, left school at sixteen with three O levels, went to drama school, became an actress, then got married and had a family. After a touch of the kitchen-sink syndrome, she decided that more education was what she needed. She got a prospectus from West London College, thinking of doing a couple of A levels, but when she saw the description of the IB, her reaction was very like Beata's. And now? 'Oh, it's given me a sense of purpose—I've even got some new ambitions now!'

Jean is a good example of the college's open-doors policy on entry qualifications: the equivalent of five O level passes is what is normally looked for, but as the course tutor has commented 'It's the level of maturity and commitment that really counts—and not only among the older applicants. This course offers a broad general education that's valuable in itself, whether they want to go on to do a degree or not'. Commitment and maturity are certainly to be found in the group—plus a definite feeling of world citizenship.

Responsible Choice and the Computer

The Deputy Headmaster and Director of Studies of Priory School, Lewes, Mr. P. O. Beale describes how a computer is used in the preparation of the school's timetable.

It is commonplace that a principal reason for setting up large comprehensive schools is that they can offer a wide range of choice of subjects. In practice many schools are uncertain how wide a choice can be achieved because the possible ways of arranging pupils are so immense. If the question is put, how many ways are there

of arranging some one hundred and ninety pupils if they had a free choice of six subjects out of twenty-five, the answer would be nearly 200,000 for each pupil. A solution might be arrived at by manual methods after a great expenditure of time but there would be no means of telling whether a far more efficient solution could be found. This is then a suitable problem for a computer programme.

The advantage of offering a great variety of subject choice are many. The situation in which pupils are forced into one of three or four rigid option groups, in which the teacher is faced with unwilling pupils, is avoided. A set can progress more happily if it only contains those who have chosen to be there. Moreover, the pupil is enabled to make a responsible, free choice after being advised by his teachers and careers advisers and the probability of achieving a contented school is greatly increased. Because all subjects can be involved in the fifth form options, CSE Modes 1, 2 and 3 as well as O level, the school does not appear to be a two or three tier community but an integral whole in which everyone has selected the subjects appropriate to his or her interests and needs.

Priory School has moved to this situation over four years. It began as the amalgamation of three schools, two grammar and one modern, so the first examination forms followed three separate courses. After two years the grammar school courses had been amalgamated but the former modern school pupils remained on separate courses. Now that all pupils will take a number of examinations, with CSE Mode 3 for the weakest, we can timetable an integrated set of options for all pupils. In practice we oblige all pupils to take an examination in English and mathematics plus five optional subjects. If it is judged that five optional subjects are too many for the weak pupil it would be possible to have a private study option some part of which is used for extra English, or to split say commerce into typewriting and business practice.

The computer procedure begins with a detailed circular to pupils listing the subjects that it is proposed to offer. After discussion with their subject teachers and parents, pupils set down their choices in order of preference giving, if they wish, an alternative to the last subject chosen. At the same time teachers send their recommendations to the careers staff. Every pupil is then given a twenty-minute interview to confirm an order of preference. Parents' evenings are timed to precede the final choice.

The subjects are entered by the careers staff on the computer data sheets and then come to me. I use a secretary to carry out a simple analysis in which she totals the numbers for each subject and lists the pupils requesting subjects for which there are under twenty-five applicants. I then construct a possible timetable avoiding clashes for pupils who are taking two or more subjects which will each have only one set. This timetable and the pupil's requests then go to the computer.

The results of the first computer run begin with an analysis that shows the numbers who have selected each subject, dividing them according to whether this was their first, second, third, fourth or fifth choice. It then lists any pupils whose choices are incompatible with the proposed timetable, naming the subject that has caused difficulty. After this the computer arranges the pupils in sets, working approximately to the maximum numbers have been allowed, and finally it lists each pupil showing the subjects selected and their positions in the pupil's order of preference.

This first run will doubtless reveal some problem cases of pupils whose choices cannot be achieved and these could be met either by changing the timetable or the pupil's choices. The latter is not so drastic as may seem. For example in biology we offer biology both traditional and Nuffield, biology with chemistry all at O level, and biology for CSE. A change from one to another may be acceptable. If the difficulty concerns the fifth choice in order of preference, an alternative may have been given but this would only be taken as a last resort. The second group of problems concerns over-large sets. Forty pupils would justify two staff but over thirty would be unacceptably large for most

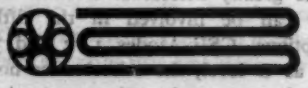
subjects. The transfer of a subject from one option group to another might solve this.

For the first computer run I would reckon to have composed a near ideal timetable that, for example, arranged the foreign languages in simultaneous sets. If one or two staff are held in reserve for the later computer runs, difficulties may be solved by adding them to increase flexibility or reduce numbers. In practice four or five computer runs have been sufficient to solve all problems save for the re-interviewing of a dozen pupils.

For the past two years this computer programme has been used for nearly two hundred pupils who have been offered twenty-four optional O levels and a few CSEs. Pupils taking mainly CSEs have been dealt with manually. The effect of ROSLA will be to increase the number of CSE candidates, so we anticipate running the computer program for some two hundred and sixty pupils. Priory is certainly unusual in having so large a number of formerly selected pupils but the computer program can be used for any subjects studied at any level. It could handle up to nineteen sets in each of a maximum of seven option groups.

In practice there are two main drawbacks to this computerised scheme. The result is a complex and rigid scheme that occupies two thirds of the year group's timetable. Whatever the demands elsewhere the pattern cannot be varied. However, because the sets and form groups of the previous year have been broken in all but the foreign languages, the timetabler has much flexibility in moving staff. We have, for example, five O level geography sets and there is no reason why a particular teacher should not be allocated to any one of these sets. This breaking of the previous year's sets and form groups for at least half the timetable is a major upset for every pupil. Of course, almost all schools face such a problem when pupils reduce a broadly based curriculum to the more limited one based on examination subjects, but few schools make as drastic a change as we do.

After two years of working such a scheme, the majority of staff who have experience of this and of more rigid systems are convinced of its superiority. The only complaints we have from pupils are from those who wish to take more subjects than the scheme allows. The one concession we can make to the very able pupil is to allow one or two O levels in the fourth year and, of course, there are O levels available to the sixth former. Most of us feel that seven O levels taken at one time are sufficient. Not least of the scheme's advantages is that it obliges pupils to exercise responsible choice and thereby to feel that they are part of a caring community which is prepared to adapt itself to their needs.



A new film from DES

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Further information

Enquiries about DES films should be addressed to:
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BOOK REVIEWS

Social Control and Socialisation: A study of Class Differences in the Language of Maternal Control

Jenny Cook-Gumperz

Routledge and Kegan Paul £4.25

This monograph is based upon research carried out by Dr Cook-Gumperz at the Sociological Research Unit, University of London Institute of Education and is a shortened version of her doctoral thesis. At the SRU the author worked with Professor Bernstein on aspects of his major research project. This investigation has been examining the problems of educationally disadvantaged children with specific reference to the role of the family and the influence of language upon socialisation. Dr Cook-Gumperz's study represents one area of the total research programme. It focuses upon the ways in which mothers perceive social structures and, through the techniques they adopt and the mediation of the linguistic codes they use, influence and maintain a child's awareness of social relationships, his social identity and appreciation of social rules.

Not unnaturally the research is firmly rooted in Bernstein's theory of social control and linguistic usage. Bernstein's concept of restricted and elaborated linguistic codes is well known to educationalists—however tortured and distorted this classification may have become. These codes are explored in relation to the three major modes of social control defined by Bernstein, i.e. imperative, positional and personal. It would seem that only the latter mode considers the individual characteristics of children and is geared to helping a child establish his own social role and identity; imperative modes involve direct 'no choice' control whereas positional control emphasises hierarchical and status features of social situations. Add the variable of social class to this matrix of codes and modes and the direction of the research becomes clear.

This is a most meticulous and thorough investigation. The data is derived mainly from questionnaires and interviews with mothers and children of three social groups, i.e. working, middle and 'mixed' class. They were asked open-ended questions about simple hypothetical social situations, e.g. 'Imagine that X has done —— What would you do/say?' Some situations concerned trivial events while others had more serious elements involving, e.g. breaking promises, stealing. This approach obviously requires carefully controlled interview techniques and a very stringent categorisation and analysis of the responses. Although full details are not given in the book, an intricate coding grid and a variation of cluster analysis were developed to cope with the problem.

The research covered many facets of social control and within the limits of a short review it is not possible to provide a summary of the results. As a gross simplification the trend of the findings seemed to indicate that personal control was more likely to be acquired by a child when it was realised through an elaborated code—this code being most likely to be used by middle-class mothers. In general middle-class mothers used strategies within the personal mode, mixed class with the positional mode and working-class mothers inclined towards the imperative mode of control. Further, it would seem that if a child receives personal control mediated by an elaborated code 'it will have a positive enhancing influence on his verbal IQ scores'.

Dr Cook-Gumperz's research gives further insight into the variables in parent/child interactions which can affect a child's development. It would seem to be particularly relevant at a time when there is increasing interest in parental involvement in education and greater recognition of the home as an educational agency. But the book is by no means easy to read. Most of those who try are likely to find it heavy going, as the style is somewhat involved and, at times, even tedious. S.G.

Art Student Observed

Charles Madge and Barbara Weinberger

Faber £6.95

Art education, throughout its history, has been subjected to constant microscopic examination. In the past decade there has been a series of committee reports leading to major changes including the establishment of the Diploma in Art and Design; further reorganisation is still taking place. Recently it has been the turn of the research worker, the social scientist and the sociologist to investigate various aspects of art education. Last year saw the publication of the very detailed survey carried out by the Government Social Survey Department, *The Employment of Art College Leavers*. Now comes this intensive study by Charles Madge and Barbara Weinberger of art students in a provincial college over a period of three years carried out with the aid of a grant from the Social Science Research Council. The College 'Midville' and its staff are referred to by pseudonyms but its identity is easy to trace. The theme of the study is the process of 'socialisation into art' and describes the life of the art students and their reactions to the new system of art education and to their teachers. By means of interviews, questionnaires, case studies and observations the authors trace the students' motivations and expectations. The influences of two trends in modern art, labelled Avant-Garde and Formalist are explained. It is interesting to note that the introduction of 'conceptualism' in this particular college led to a reaction and the re-emergence of visual studio work.

The researchers were surprised to find the art students a very articulate group. Obviously, there is heavy reliance on the students' comments; in fact there is probably too much dependence and this will make some art teachers suspicious of certain of the findings. Many of the Fine Art students at Midville College of Art gave self-expression, emotional outlet and compulsive need as prominent motives for taking art. In contrast a substantial proportion of Graphic Design students had a career in mind. The authors reveal that the students found the change from school art to work at the College a considerable and sometimes traumatic break. But the difference between study on a foundation course and the Dip AD course was considered to be equally discontinuous. There are detailed accounts of the interactions between staff and students. Many readers will question the shock tactics employed by the staff. Such teaching methods were intended to emphasise personal development and to make students self-analytical. Nevertheless the tough, aggressive line of many tutors, as described in the book, made some students angry and must be open to question. Not surprisingly, the male students were better able than females to tolerate criticism by the tutors. During the survey there were repeated references by the students as to how they changed as individuals during the course. An interesting comment by one student was 'my main gain from the course is the idea that art is not an unthinking process'. Although the authors made very limited checks of their findings in other colleges, it is a pity that the enquiry was confined to this particular college. During the survey the college was struggling to gain recognition for Dip AD and for most of the time approval was restricted to Painting and Graphic Design. In these circumstances it hardly seems an appropriate college to use to come to reliable findings about art students generally. A college with a wider range of design students would have been preferable. Those working in art education might find this book of limited value for this reason. The outsider's reactions will probably vary from deep interest to the conclusion that much about art education, and about art itself, remains difficult to understand. However, it should be remembered that what happens in art education today frequently happens in other fields tomorrow. The visual presentation of the book is disappointing.

F.W.

Boarders Away

Longmans £1.00

'Boarders Away', begun by the late Sir John Newson and subsequently edited by Mary Ollis with a clarity and objectivity of which he would surely have approved, provides, for the first time, a detailed overall account of the educational cruises organised by the British India Company since 1961. By the end of 1973, more than 400,000 11 to 18 year olds, with their teachers, will have travelled to places as far apart as Istanbul and Reykjavik or Haifa and Lanzarote.

The statistics of the enterprise alone entitle the book to serious consideration. Education officers and teachers will, however, find most food for thought in the sections describing the complicated task of preparing for and implementing a purposeful and balanced programme of work and recreation in unfamiliar surroundings and within a fortnight's span. The account of the exacting role of the party leaders should at last dispel the notion that the cruises are merely holiday jaunts.

Parents will almost certainly find most interest in the vignettes of life afloat and ashore contributed by administrators, teachers and the pupils. These personal comments may also help other readers to sense, in part at least, what Sir John Newson had in mind when he called the cruises one of the more significant practical developments of educational experience.

'Boarders Away' is not only a very readable chronicle of past and current successes and disappointments. It also looks at the shapes of things already emerging and to come and suggests that the time is ripe for some hard thinking about the function and value of cruises of this kind, in the broader context of changing educational ideas. In this critical re-appraisal, education authorities and schools, not only in Britian, and British India itself will have equally vital parts to play.

The excellence of the five photographs makes one wish that there were many more.

J.V.S.

The Comprehensive School—Guide Lines for the Re-organisation of Secondary Education

Elizabeth Halsall

Pergamon Press £4.10

Dr Halsall's book is an attempt to correlate the research that has been done on many aspects of comprehensive education with the practical problems and issues that are to be found within the schools themselves. In order to do this the author takes a number of different aspects of the organisation of comprehensive schools and considers them in turn. These aspects are:

> Streaming, deprived children, guidance and counselling, the curriculum, non-curricular aspects of school size, school size and its effect upon the curriculum and achievement, offsetting the disadvantages of the larges school, offsetting the disadvantages of the small schools, and comparing the advantages and disadvantages of different forms of comprehensive re-organisation.

The basic premise of the book is that the small comprehensive school is viable. By a small comprehensive school the author is referring to schools of a maximum size of six form entry but an average size of four form entry. Her conclusions can be best summed up in two quotations. First, 'the complex problems of the large school require complex and sometimes expensive solutions. So far, research suggests that they do not quite make up for the losses in personal contact and personal development that go with increased size, but that the effort and expense involved cannot be questioned.' Secondly 'the small comprehensive school's defects are curricular and academic, but they are not beyond solution . . . the problems of the small school have been insufficiently understood, or rather its problems were understood but the relatively small cost of remedying some of them was not realised.' In reaching these conclusions Dr Halsall discusses many of the difficulties that affect the successful organisation and running of comprehensive schools of different sizes. The section on streaming does not produce

anything that is new but nevertheless is a good review of literature. However, in the section on the school and the culturally deprived child there is the startling suggestion that a regulation, whether it be national or by local bye-law, be instituted that would compel all parents to visit the secondary school at which their child is a pupil, at least once a year in order to consult with the head and staff. However frustrating the difficulties are of getting some parents to come to school and discuss their children's future and welfare this solution is unrealistic. At the same time the author makes many of the more usual suggestions for improving school parent/teacher relationships. Also rather unusual is the suggestion that motivation of the less able pupils could be improved by making it compulsory for them to sit at least one subject in an external examination, presumably CSE. This suggestion is taken further in the section on the secondary school curriculum for the less able where a suggestion that CSE subjects for these pupils should be established. Whether this fits in with the original intention of CSE or not, it is doubtful whether the chance of attaining an unclassified grade would really provide an incentive for many pupils. Further suggestions for improving pupil motivation include the commoner ones of better parental involvement, counselling, work experience, and improvement in teacher training, both initial and in-service. In an order of priority the author would put parental involvement first.

In the section on the curriculum there is the suggestion that the option system should not operate until the beginning of year five, and this would be combined with a very much larger common core. It is interesting that the definition of an option system is 'a system designed to make it possible to drop subjects'. This seems to be a negative approach—the dropping of subjects is concomitant with the choice of spending more time on the other subjects but not an end in itself. In this proposed fifth year option system it is suggested that particular subjects or groups of subjects would appear on the timetable at the same time as particular themes in the same field. It would then be up to a pupil to decide whether he would take a subject or theme. The implication is that subjects would be academically biased and therefore would be chosen by the more able and that groups of subjects or themes would be chosen by the less able. Further arguments along these lines lead to the conclusion that by adopting this system savings could be made in staff. However, because themes and subjects in the same area of knowledge would appear on the timetable at the same time it is more likely that this could only be applied in a large school and not in a small. Models for fifth year curricula are given in appendices, but some of these are not improved by the division of the courses into GCE, CSE and 'Newsom'—a phrase which appears out of place in the general philosophy of the argument.

In the two chapters on the size of schools there is a section on teacher morale and behaviour which rehearses the usual arguments, and another containing a number of statements made on pupils' and ex-pupils' reactions which are only meaningful if one could know exactly what questions were asked to provide the information. Further sections deal with the problems of movement of pupils around schools, pastoral care, and communications. The author's conclusions after investigating the non-curricular effects of school size are 'small schools are easier to manage, have better school climates, are likely to be more innovative, other things being equal, and provide an intrinsically better environment for effective pastoral care than is the case with large schools. Offsetting of these disadvantages by teachers in large schools demands great effort and extra work, for some aspects of the effects of size. For other aspects it may well be nigh impossible to achieve'.

Despite the clear bias in favour of one size of school this study deserves attention because of the diversity of questions that are asked, explicitly and implicitly about secondary education. The correlation of research and practice, American and British, is most valuable and the selected classified bibliography is worthy to stand as a piece of work on its own.

DGL

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